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With Which Is Combined

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Smith-Crabtree Group Acquires Merritton Mill

Control Secured of Lincoln Pulp & Paper Co. Plant, Including Two Paper Mills, Sulphite Pulp Mill and Flour Sack Mill—Same Interests Recently Secured Control of Ritchie & Ramsay Coated Paper Mills, Toronto—International to Begin Work on New Pulp and Paper Plant Near Dalhousie, N. B.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., August 6, 1928.—It is announced here that C. Howard Smith and Harold Crabtree, of Montreal, have secured control of the Lincoln Paper Mills, Merritton, Ont. This is practically the last independent book and writing paper mill left in Ontario. The same interests some time ago also acquired control of the Ritchie & Ramsay coated paper mills, Toronto.

The Lincoln Pulp and Paper Mills operates plants at Merritton and Little Cascapedia, P. Q. The mills at Merritton include a sulphite pulp mill, a flour sack mill and two paper mills. In Quebec, the company owns a saw mill and a pulp wood mill and 280 square miles of timber limits. The total production amounts daily to 50 tons of sulphite, 30 tons of paper and 30,000 bags. R. Home Smith is president of the Lincoln Pulp and Paper Mills.

C. Howard Smith and Harold Crabtree are president and managing director, respectively, of the Howard Smith Paper Mills. Their new venture is said, however, to be on their own account. Nevertheless, the deal means that the control of practically all the high grade paper production in Canada has now passed into the hands of two groups—Smith-Crabtree and the Provincial Paper Mills. As they have for years enjoyed a heavy protective tariff of 25 to 35 per cent as well as a high import sales tax, they have been doing well.

More New Developments Announced

Despite the present state of the news print market, news of new developments in the industry continue to occupy a prominent place in the newspapers. For instance, during the week it has been announced from unofficial sources that the International Paper Company will commence construction on its $15,000,000 pulp and paper plant near Dalhousie, N. B., next month. It is said the plant will probably begin operating on a 250-ton basis, and this capacity will be extended at a later date.

Another despatch, from Halifax, says that as soon as the International Paper Company has completed its negotiations for the purchase of the New Brunswick Railway Company's land, the company will commence work at once on the plan for the erection of a 100 ton sulphite mill to be erected on the Miramichie River. The construction will start during 1929 and be completed in 1930. The negotiations with the railway leading to the purchase of the lands are proceeding favorably. The company is working on plans for the mill and making investigations for the site.

From Halifax it is further announced that the $5,000,000 paper mill development being established on the Mersey River in Queen's County will be known as The Mersey Paper Company, Ltd. Incorporation was completed last week under the Nova Scotia Companies Act.

The capital stock of the company is 50,000 preference shares of $100 each and 150,000 common shares of no par value. It is understood that the president of the new company will be Col. C. H. L. Jones, president of the Canadian Pulp and Paper Association, and one time vice-president of the Spanish River Pulp and Paper Mills.

He is now in the province. It was noted in the memorandum of association setting out the objects of the company, that these included the handling and operation of all types of aircraft.

From Three Rivers, Que., comes the news that the construction of the two machine extensions to the plant of the St. Lawrence Paper Mills is up to schedule. All the major contract for machinery has been placed. The steam plant is being built by Canadian Vickers, which will be fired with equipment provided by the Combustion Engineering Company. The two 160 ton machines are being built by the Dominion Engineering Works. Contracts for power not provided for the Company's own generators has been negotiated in the Shawinigan Water and Power Company.

The Hearst Damage Suit

Continuing their efforts to secure the release of 45 carloads of news print now held under seizure by order of the Superior Court here, 25 Hearst newspapers have petitioned the Superior Court to appoint a sequestrator to sell the news print and deposit the proceeds pending the outcome of a suit entered against William Randolph Hearst and the Newspaper and Magazine Paper Corporation, of New York, by the Canadian Paper Sales, Ltd., for the recovery of $987,630 damages. The motion was set over.

The contention of the newspapers, which are named as mis-en-causes in the main action, is that demurrage charges are mounting up at the rate of $250 a day, because the news print is being held in freight cars. It is also alleged that the news print is liable to damage in its present location. If the court agrees to name a sequestrator, the petitioners ask for the appointment of the Eastern Trust Company, and that the sequestrator be given authority to pay the demurrage charges of over $4,000 which have already been incurred and deposit the balance of the proceeds in a bank.

Recently Justice Duclos maintained a motion to secure the release of the paper, on condition that the newspapers concerned deposit the full amount of the main action. The present motion indicates that the petitioners were unwilling to fulfil this condition.

Pennsylvania Mills Ready for Fall Production

Overhauling of Machinery and Annual Stock Taking Practically Completed — Quick Manufacturing Service Assured Through Electrification of Units in Many Plants—Paper Board Mills Said to Be Broadening Their Operations to Full Time Schedule

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., August 6, 1928.—As the autumn needs of many industries are anticipated, the Quaker City is beginning to experience a forward buying movement of fairly good proportion, despite the hot weather and the absence of many business men from the city. Though no boom has begun there is evidence that larger volumes of paper are to be consumed with the coming Fall days. The present demand is broader, with many lines that have been dormant for several months now assuming activity.

Mills in the Philadelphia territory are completing summer time stock taking and preparing for autumn production after the general overhauling of machinery customary during the quieter hot months. While no great innovations have been made to the equipment, many of the mills have been giving attention to the electrification of units for speedier service in manufacturing. A few of the local mills have within recent months completed their electrification work and will be prepared to handle orders with greater despatch.

As the mills get into line for their autumn schedule, the paper stock market is brisker and demand broadens for many of the grades of high class raw materials. As the mills make inquiries the local dealers are anticipating higher prices in event of material increase in demand owing to scarcity of many grades that were eagerly sought earlier in the season. These grades are chiefly book and ledgers that have been in demand by the fine paper manufacturers and which were boomed in prices as the demand superseded the supplies in warehouses.

Mills Become Active With Fall Demands

As the mills become more active with fall demands, the kraft market is steadily maintained with a tendency towards advancing prices, according to manufacturers announcements. There has been a slightly more active demand for kraft for wrapping purposes among the manufacturing industries and mercantile trades in the distributive field within recent days though the volume of traffic in these commodities is not up to normal seasonal requirements.

Following the advance in the prices of bags of all description which was made in mid July, independent manufacturers have taken action to steady their products along with the nationally known producers who made the price advancement of 2½ per cent in the last month. Independent manufacturers in the local market have made a quotation that covers a similar increase for many lines and slightly higher values for other grades that are slower moving products.

As the paper board market shows evidence of improving demand for the news and chip grades, manufacturers conducting the larger chain mills with local and western connections are broadening operations to full time schedule after several weeks of five day basis of production. Although the market for boards has been narrow throughout the early summer weeks, prices have remained firmer than in former years when hot weather days produced a lagging demand that was stimulated by inroads on values. A few of the box manufacturers are turning attention to coming needs for Christmas and have been more frequent buyers of grades of board that are especially adapted for this class of work. Along with improved box manufacturing conditions there have been growing orders for fancy box makers cover papers.

The mode for holiday wrapping of cigar boxes with fancy glassine papers for gift purposes, which last year was in force in the cigar manufacturing trade of this city will this year be even more broadly followed by the Quaker City cigar manufacturers now engaged in promoting the Christmas specialties. The larger nationally known cigar factories are planning to produce larger assortments of gift packing in holiday designed carton wrapped in glassine and this field of consumption offers many opportunities for local manufacturers of fancy glassine.

Wholesale Waste Merchants Outing

The Wholesale Waste Merchants Association of Philadelphia is now engaged in preparation of an outing that will be held this month at a date to be selected later on. Secretary William J. McGarity is working on plans with a view to appointing a committee which will provide for the entertainment features. The committee will be appointed in the coming week and then the date and place will be announced.

Progressive Paper Co. Acquires New Quarters

With a view to extending its business, the Progressive Paper Company has acquired larger quarters at 134 North Delaware avenue, where it will remove its present stocks in the coming Fall. In the new location there has been leased three floors of the building, with several thousand square feet of space. The new location is being remodeled and modernized to meet the requirements of a modern wrapping paper and specialty business in tissue papers. When completed by October 1, the present home at 266 South American street will be vacated. The firm deals in a general line of wrapping and coarse papers and has an extensive business in tissue papers handled in carload lots. In the new location there will be stocked carloads of Crystal No. 1 white tissues in addition to other grades. Harry A. Clair, of the company, has returned to headquarters after an extended honeymoon spent in the Great Lakes Regions following his recent marriage to Miss Mary Berger of this city at the Bellvue-Stratford Hotel.

International to Negotiate Local Orders from New York

Local distributors of the lines of paper manufactured by the International Paper Company have been notified that all orders for the products of that concern will be negotiated through the New York headquarters. This notice was effective with the late July days when distributors were informed that the home office is negotiating the orders for the Quaker City dealers. No further information is given other than that quoted and it is assumed that the Philadelphia sales offices are to be continued as local sales promoters.

W. C. Hamilton & Sons Make New Bonds

Among the newly developed lines of paper of extra high quality produced by the W. C. Hamilton Sons Mills, located at Miquon, just outside of Philadelphia, is the Hamilton Bond, an entirely original sheet that is tubsized and produced with genuine watermark. It is produced in white, and ten attractive colors of modern hues, and is being merchandised through the jobbing trade of the nation. The Hamilton Mills are placing the new bonds among the distributors. They will be backed by an intensive advertising campaign. The advertising campaign is being directed by Charles R. Barr, of Holyoke, Mass., who has been engaged by the Hamilton Mills as Advertising Counsel. Since the introduction of the new Hamilton Bonds, Sales Manager Joseph H. Dunton has been receiving many inquiries from dealers and consumers of these papers from all sections of the country.

Cellophane Products Popular

The newest additions to the paper trade products perfected by the John M. Driver Company, 57th street and Lancaster avenue, in the printed cellophane bags and wrappers, are being distributed in larger volume as the innovation in wrappings grows in favor among the consuming industries. Until the perfection of a printing process for the imprint of cellophane by the Driver company, these commodities were not much used as wrappers. For the past few

years the Driver company has been experimenting with its own patents on printing cellophane and this year has been able to achieve considerable success in marketing the printed wraps that make visible the articles displayed and also provide protective covering for many commodities heretofore left unwrapped and exposed to rust and deteriorating influences of the air.

National Gift and Art Show

The Quaker City headquarters of the National Gift and Art Association, with offices in Room 644 Drexel Building, last week sent out the latest announcement of the completed program for the week of August 27 to September 1, when the national show will be held in this city at the Adelphia Hotel. The National Gift and Art Show will include many paper commodities for year round and special holiday lines including the coming Christmas season.

Cellophane wrappers are very effective in the prevention of rust and deteriorating influences of the air. Such metal products as gardening tools, hardware, cutlery, stationery specialties, and like merchandise are now provided with a wrapper that will make available the display of the goods without the necessity of unwrapping the article through the new cellophane coverings that bear the imprint of the brand or maker's name. Confectioners and other food trades have been using larger quantities of the new coverings. The Driver company has added new machines to take care of the increased demand for their latest improved wrapping commodities. Stationery firms who feature fancy packings in boxes and portfolios have been using the cellophane covers profusely in the current year both for wrapping and for innovations in designs for inset display purposes.

Aatell & Jones Increase Specialties

With the settlement of Aatell & Jones, Inc. in the newly acquired home located at 1314 South Howard street, the firm will develop a new line of specialties in converted products for hotels, clubs and similar organizations. The firm is now installing mechanical units and expects to be settled in the new quarters by September. The Aatell & Jones Company is one of the largest concerns devoted to the production and creation of paper products for hotels, clubs, food manufacturers and other industries consuming high class commodities. With the completion of present quarters there will be developed new doilies, fancy bakery boxes, charlotte russe cups, tortoni cases and confectionery containers adapted for hotel and restaurant uses. There are also produced napkins, foodwraps, menus and other similar lines. The new plant has complete die cutting, printing, embossing and cutting and converting departments. The present home is a two story structure on a plot 134 by 30 feet and replaces the old quarters at 20th and Summer street.

American Forest Products Co. Expansion

An extensive wholesale business has been developed by the American Forest Products Company, 24th and Race streets, distributors of wrapping papers, corrugated products, twines and specialties. The company, which is associated with the Wholesale Paper Merchants Association of Philadelphia, is representing nationally prominent mills, in the sale of kraft wrapping papers, in large volume featuring smaller rolls to carload lots of No. 1 grades. A complete line of twines made by nationally known mills is stocked in a wide range of varieties. The American Forest Products Company has acquired the local distribution of the Spongee Paper Twines and is the exclusive distributor of its own line of corrugated products and other specialties.

Matthias & Freeman to Change Quarters

By November 1, the Matthias and Freeman Company will be entirely settled in new quarters recently acquired in the Horstmann Building on the northeast corner of 5th and Race streets. The company distributes fine printing papers and a wide range of box makers papers under its own brands will occupy the spacious first floor of the structure which extends almost half a city square. Removal from the present home will begin in late summer. The first floor of the Hortsmann Building in the meantime is being remodeled to meet the needs of the paper house and the structure brought up to date for the use of the company. With the removal, all departments will be consolidated on the single floor with three times the present space available.

Gould Paper Co. Pulp Mill Burned

[FROM OUR REGULAR CORRESPONDENT]

LYONS FALLS, N. Y., July 30, 1928.—The pulp mill at Gouldtown owned by the Gould Paper Company, which was partially destroyed by fire last week will be rebuilt immediately, according to Harry P. Gould, president of the company. The first estimate of the loss sustained by the company in the fire was $100,000 but this was later cut to $50,000 when it became known that considerable machinery could be salvaged.

The pulp mill was a two story structure. The fire which originated in the wood room on the upper floor spread rapidly and because of the early morning hour at which the blaze was discovered it was impossible to check the flames. The upper part of the structure was destroyed while the lower floor which was of concrete and contained the grinders did not suffer greatly. The grinders while slightly damaged can be salvaged. Harry P. Gould, president of the company, stated that the loss was not covered by insurance.

Milton Brill, superintendent of the mill, was summoned when the fire was discovered and after calling the Lyons Falls fire department formed a bucket brigade with H. P. Gould and son, Gordon Gould, and G. M. B. Williams, manager of the company, and fought the flames.

Two other mills of the Gould Paper Company at Gouldtown were undamaged by the fire. Pulpwood stored in the yard of the destroyed plant was saved from the blaze and later the wood and a quantity of pulp were removed.

A building located on the same site was destroyed by fire in 1900 and was replaced by the present brick and wood structure. The pulp mill had a working force of twenty-five men all but four of whom were employed on the day shift.

Boston Paper Market Unchanged

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., August 6, 1928.—The wholesale paper market is practically unchanged, continuing about normal for the season. Possibly the extreme hot weather during last week has tended to slacken business to a certain extent. A dealer says that the fine paper handlers are getting their share of what business there is, but that it might be a good deal better. Prices of fine paper are at the same levels.

Kraft is reported very quiet, with orders placed in small volume. Quotations are unchanged. Box board is rather inactive, and practically all orders are for immediate delivery. Some report a fair amount of orders, but it is expected that the latter part of August will see considerable improvement. Values are unaltered as a whole, although some mills are willing to sell chip board at 42.50 instead of 45, on account of slower demand.

Although rags and paper stock were quieter than usual during July, some say that the market is now rather good, all in all, for the summer time, and that business is keeping up pretty well. No. 1 mixed paper has been in fair demand and selling at $10.50 a ton. There is some movement in No. 1 books, heavy. Old newspapers are fairly strong, and moving in moderately substantial weights. In rags, dark cottons are steady and rather active.

Stebbins Co. Increases Stock

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., August 6, 1928.—The Stebbins Engineering and Manufacturing Company, of Watertown, producers of paper mill equipment, has filed notice with the Secretary of State of an increase in capital stock from $75,000 to $125,000. Papers were filed through Purcell & Cullen, attorneys, of Watertown.

Paper Trade Declines Seasonally in Chicago

Prevailing Hot Weather and Summer Vacation Period Takes Toll of Local Paper Organizations —Direct Mail Houses Purchasing Heavily for Fall Requirements — N. A. Schoenbucher Appointed Business Advisor to Chicago Paper Association

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., August 6, 1928.—August, replete with hot weather and vacations, is taking its toll of paper houses in Chicago and, as a result, business is rather slow and news of great importance is somewhat lacking. Those houses who supply direct mail firms with paper are finding that many business organizations are already buying in anticipation of fall campaigns. A good grade of paper is being purchased to take care of exceptionally attractive printing that seems to be a characteristic of present day advertising literature.

The Paperboard Industries Asociation is already laying plans for its next meeting in Chicago in the fall while members are also beginning to look forward to the National Paper Trade Association meeting also in the fall. The Chicago Paper Association has elected a business advisor as announced elsewhere in this letter. The Salesmen's Association of the Paper Industry will not resume its regular Monday noon luncheon meetings until the week following Labor Day.

The majority of the various paper lines are characterized as being in the midst of the seasonal decline in sales volume. Prices are steady and all lines are optimistically viewed for fall business.

N. A. Schoenbucher's New Post

Of unusual importance to those engaged in the paper industry is the announcement given out by the Chicago Paper Association that N. A. Schoenbucher has been engaged as business advisor for the association and will devote a part of his time for the benefit of the Chicago group of coarse paper firms. Mr. Schoenbucher will take care of this work, in addition to his duties in other fields. According to the executives of the Chicago Paper Association, the former secretary of the National Paper Trade Association will aid in the standardization of accounting operations of member firms. His work along these lines is known by a great many paper houses who felt the value of his wide knowledge and experience while an executive of the national organization.

Following the termination of his services as secretary of the National Paper Trade Association, Mr. Schoenbucher kept in close touch with the paper field and his knowledge will undoubtedly be of great value to the Chicago Paper Association. His appointment is regarded by executives of the coarse paper group as a further step in the constructive and closely cooperative work that organization is doing in improving conditions in the Chicago market.

Milwaukee Entertains Chicago Paper Men

A dozen members of the Chicago Paper Association visited the Milwaukee organization of coarse paper men July 30 and found their neighbors quite willing to combine pleasure with business in a most successful way. The entertainment provided by the Milwaukee organization consisted of a luncheon followed by a baseball game in which the Chicago paper men copped a 25 to 12 decision, according to Leo Althaus, popular president of the Chicago Paper Association. The meeting was held at the New Randolph Hotel following an excellent dinner. The discussion was given over entirely to constructive exchange of thoughts, with an eye toward bringing closer cooperation between the two organizations. Problems of common interest were gone over and various grievances and difficulties discussed in order that any misunderstandings might be entirely done away with. So successful was the joint meeting, and so enthusiastic was the spirit evidenced by the two groups that regular joint meetings are to be held, possibly once a month, alternating as to location.

The Chicago Paper Association plans its big outing at the Butterfield Country Club, August 15. Plenty of golf and both indoor and outdoor sports will provide entertainment for a crowd that has a reputation for putting forth fun and merriment in the proper fashion.

The Ontario Company, manufacturers of envelopes, have moved their location from 429 South Ashland street, to 500 South Throop street, Chicago, and announce that they will have a more convenient location, larger quarters and more room for expansion at their new plant. The announcement of the change in location was contained in a very clever piece of direct mail that is worthy of favorable comment.

News of the Trade

The Paper Mills' Company, 517 South Wells street, Chicago, recently issued its Price List No. 65, under date of July 30. Thirty-one pages are given over to a concise description of stock and accompanying prices. Ninety-seven different lines are listed in the index accompanying the price list, indicative of the wide and representative stock carried by the large Chicago Paper house.

Gamble, Kuhl & Bent, prominent Chicago direct mail advertisers, recently issued a folder describing a new process of water color printing, which provides clear, beautiful colors, coupled with flat, brush-like effects attractively displayed in the folder to illustrate effective uses in this day and age of color in advertising to demand attention.

The many friends of Edgar A. Hall, Sr., of the Pilcher-Hamilton Company, Chicago, will be very glad to know that he is now convalescing at his home following an illness of long duration. He is reported as doing nicely and, though he is not yet at his desk, his many friends will be glad to know that it will not be long until his personality and friendliness will again be available in active business circles.

Taggart Corp. Entertains Brokers

OSWEGO, N. Y., August 6, 1928.—Officials of the Taggart Corporation were hosts recently to a party of brokers who came here to inspect the Taggart properties. The party included chief executives and branch managers of the F. E. Kingston Company, of Hartford, Conn., widely known investment brokers. The visitors numbered fourteen and after a busy day inspecting the plants of the Oswego Bag and Paper Company and the Oswego Board Corporation they were entertained at luncheon at the Oswego Country Club.

Officials of the Carlisle organization who entertained the visitors included B. B. Taggart, of the Taggart Corporation, Corwin T. Jewell, general manager of the St. Regis Paper Company, and associated concerns, H. S. Sutton, and Thomas F. Remington, the latter two coming from New York for the occasion.

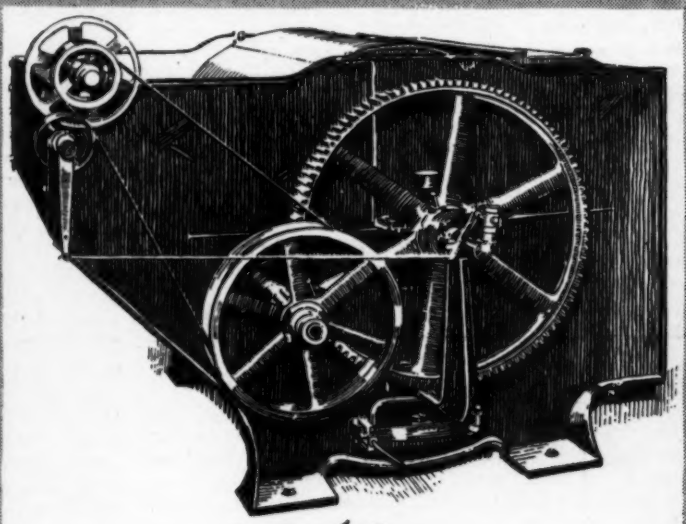
Mr. Taggart declared there was no special significance to the visit of the brokers. He said that the F. E. Kingston Company are large investment brokers and desired to have their chief executives and branch managers look over the Taggart bag mill and the new board plant which have been constructed and put in operation since last summer when the brokers visited Oswego before.

Fibre recovery boiled down to its simplest terms

1. **Some automatic, inexpensive way to get the fibres out of the waste water and return them for immediate re-use.**

2. **The remaining white water fit for use in the shower pipes so none of the fibre will be wasted.**

Isn't that the surest, simplest way to make fibre recovery profitable as well as efficient.



The BIRD SAVE-ALL

BIRD MACHINERY

2154

BIRD MACHINE COMPANY

South Walpole : : Massachusetts

Consolidated Water Power & Paper Expansion

Steady Progress Being Made on Construction of New Bleach Plant at Wisconsin Rapids and New Inter-Lake Digester Plant at Appleton, Wis.—Four New Electric Motors Being Installed In Pulp Grinding Department of Branch Mill at Biron

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., August 6, 1928.—In addition to the construction of a new bleach plant, the Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis., is making other improvements. Four new electric motors are being installed in the pulp grinding department of the branch mill at Biron. They are 500 h. p. and will be connected directly to each of the four pairs of smaller grinders, as auxiliary power to the 1100 h. p. water wheels at present driving those units. This change will make up for the fluctuations in the speed of the grinders, caused by the variable water power supply. The motors will function whenever the load warrants. Increased production and a better quality of pulp are expected to be the result.

Transportation of pulp from the Current River mill to the Bare Point mill of the Thunder Bay Paper Company, of Port Arthur, Ont., will be accomplished by means of an underground pipe line which is being installed. This company is a subsidiary of the Consolidated. The plan is similar to one used successfully over a three mile route between the Wisconsin Rapids and Biron Mills.

Ten inch cast iron pipe will be used, and the line will be laid on even grade for a distance of two miles. By this method eighty tons of ground wood will pass daily between the two mills. An eight inch Hayton centrifugal pump will be set up to pump the stock into the line. An order also has been placed for a "go devil," a device invented recently by T. R. Hayton, president of the Hayton Pump and Blower Company, to solve the problem of cleaning out the pipe line and keeping it free from corrosion.

Steady Progress in New Bleach Plant

Steady progress is being made on the Consolidated's new units, the bleach plant at Wisconsin Rapids, and the new digester plant at the Inter-Lake Pulp and Paper Company, Appleton, Wis. Three Fletcher bleachers of the latest type will be installed in the former. The vats will all be lined with white tile. The equipment will include a chlorine system and clay handling machinery that will permit shipment in bulk and quick rehandling from cars to bins. The new plant will bleach and screen about fifty tons of pulp a day, to be used on the book paper which will take the place of the newsprint production at the Consolidated mill.

Concrete is being poured in large quantities daily for the walls of the new Interlake plant. A high delivery tower has been set up so that none of the cement is handled by hand. Sills for three out of nine digesters have arrived and are ready to be set up. They weigh five and a half tons each and are fourteen feet in diameter.

Appleton Machine Co. Developments

Approximately $90,000 will be spent for the new building and equipment now under construction by the Appleton Machine Company, of Appleton, Wis. The Valley Construction and Engineering Company has the contract. Total ground area of the structure will be 100 by 137 feet, and it will include a one story foundry building, and two wings of two stories each which will house a pattern storage and cleaning department. The exterior will be of brick and reinforced concrete.

There will be a casting pit seventeen feet deep in the foundry. Traveling cranes will be installed and the equipment also will include modern sand blasters and casting machines. The old foundry building will be remodeled into an assembly department. The floor will be raised to the level of the machine shops and traveling cranes will be installed there also.

News Print from New Zealand's Wood

Full details have been announced by the U. S. Forest Products Laboratory, Madison, Wis., concerning experiments during the last year with the manufacture ot news print from New Zealand's native species of woods. The work was so effectively done that satisfactory processes for the manufacture of pulp from American hardwoods are expected to be one of the results.

Alex R. Entrican, engineer of the New Zealand forest service, brought two car loads of logs to the laboratory, of the following species: Insignis (Monterey) pine, rimu (the dominant New Zealand soft-wood), tawa (a New Zealand hardwood unsuited to the production of lumber), European larch, Austrian pine and Corsican pine. The two New Zealand woods and the insignis pine were considered most important for the pulping trials. The main objectives were to produce a pulp or pulps suitable for news print particularly from rimu, tawa and insignis pine, to produce a satisfactory kraft pulp from pines and larch, and to produce bleached chemical pulps.

A satisfactory news print sheet was produced from mixtures of tawa groundwood (produced in a strictly mechanical manner on a pulpstone) and tawa sulphite (chemical) pulp with insignis pine sulphite. The usual 3 to 1 ratio of groundwood to sulphite pulp was reversed and the sheet produced from a mixture of 50 per cent tawa sulphite, 35 per cent tawa groundwood, and 15 per cent insignis sulphite. Satisfactory kraft pulps were produced from the New Zealand pines and larch, and bleached pulps suitable for book paper from tawa by the soda and sulphite processes, and from insignis pine by the sulphite process.

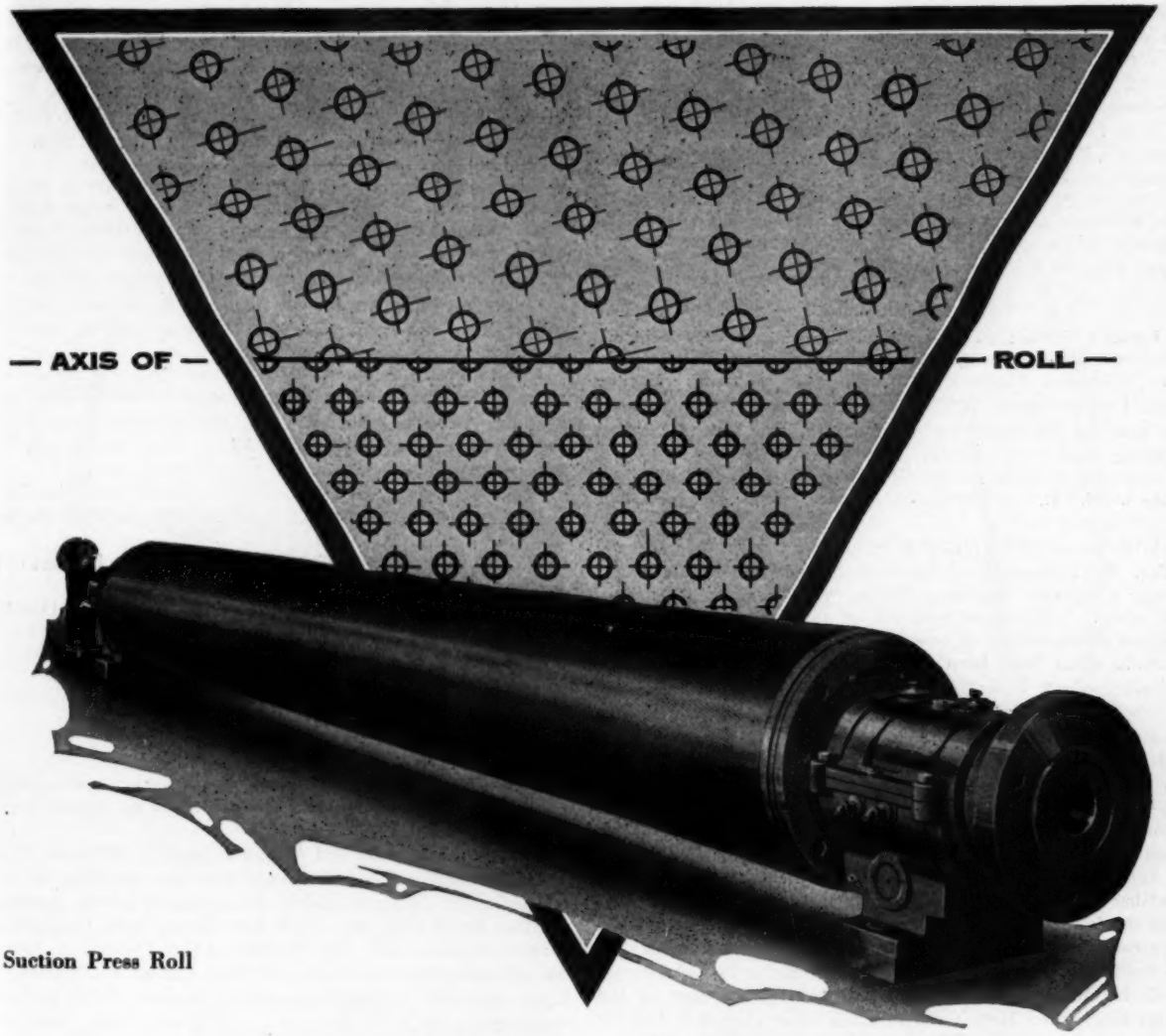
As a final test, several tons of news print and rotogravure papers were made at the Great Western Paper Company, Ladysmith, and the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis. The print was used for a newspaper run on a daily at Madison, Wis., and stood the tryout with satisfaction.

New Zealand has 100,000 acres of forest plantations, and there was a desire both to thin the tracts and find a profitable use for the woods. The U. S. Forest Products Laboratory undertook the task a year ago, and now makes it possible for New Zealand to establish a paper mill of its own where it is believed news print can be made even below what it costs laid down there from England and Canada. The country's consumption is estimated at 100 tons of pulp daily.

It is stated by the laboratory officials that "the development of a successful process for manufacturing news print for New Zealand hardwoods opens up possibilities in the use of American hardwoods for news print production in this country." With the spruce and hemlock supply growing smaller and the possibility of a Canadian embargo on unmanufactured pulp and pulpwood, diversification will be welcome to news print users, it is said.

Important Freight Rate Victory

There has been a successful culmination of the efforts of paper mills at Green Bay, Wis., to obtain a reduction of freight rates to Indianapolis, Ind., so as to remove unfair competition which existed between them and shippers operating from St.



Suction Press Roll

Spiral-Staggered Drilling A Kilberry Development

THE diagram in the upper part of the triangle shows the Spiral-Staggered drilling in the shell of the Kilberry Suction Press Roll while the diagram in the lower part shows the staggered drilling

This spiral-staggered method of drilling the suction press rolls insures a stronger shell, less felt wear, less packing wear, no cutting of inside of shell and reduces marking of sheet to a minimum.

The Kilberry Suction Roll is driven direct from couch or press drive, without gears,—an exclusive, patented feature. The Suction Box is concentric to shell, easily adjusted and removed, and is carried in ball bearings within steel journals.

Get the facts and compare values.

Our Products Meet Our Promises

DOWNINGTOWN Manufacturing Company Downingtown, Pa., U. S. A.

CAN. REP. FOR KILBERRY SUCTION ROLLS - CHAS. WALMSLEY & CO. CANADA LTD. MONTREAL, QUE.

Louis, Mo. The entire Fox River Valley and the mills in the vicinity of Rhinelander, Wis., will benefit by the changes.

Wrapping and print paper shipped to Indianapolis will be reduced from 31 to 28 cents, and on toilet paper, paper towels and napkins there will be a reduction from 38 to 35 cents, effective Oct. 1, 1928. This decision of the Interstate Commerce Commission followed recent hearings and the filing of protests against against the existing situation.

The victory is important also because the decision prevents the defendant carriers from increasing the rates to St. Louis and Illinois points so as to remove the discrimination. The old rates will still be in force.

News of the Industry

Lands which are set aside for tree growing in Wisconsin this year will amount to 162,000 acres, according to a decision of the Wisconsin Conservation Commission. Fifty-one hearings were held during the last week to determine what lands should be accepted and made tax-free under the new forest crop law. Among these were several large tracts designated by paper manufacturers as lands that would be used solely for raising pulp wood. It is expected that a much larger acreage will be reserved next year.

With no accidents reported during the months of May and June, the main mill of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., completed 100 days of safety. This is the best record the mill has had, as its highest previous total of consecutive no-accident days was 83.

Final steps have been taken in the reorganization of the Kimberly-Clark Company, Neenah, Wis., now known as the Kimberly-Clark Corporation. A meeting of stockholders was called recently at which the old company was dissolved. A total of 104,949 shares out of 110,000 was represented, all of them voting in the affirmative on the plan of forming the Delaware corporation to take over the assets of the old corporation. The license fee paid to the State of Wisconsin for reorganizing was $12,480.

Announcement of the election of F. J. Sensenbrenner as a member of the board of directors of the Minneapolis, St. Paul and Sault Ste. Marie Railroad was made last week. Mr. Sensenbrenner is president of the Kimberly-Clark Company, of Neenah, Wis.

E. H. Meyer, vice president and general manager of the Marathon Paper Mills Company, has been elected a director of the First National bank, of Menasha, Wis.

Ole Olson, head millwright for more than forty years at the Gilbert Paper Company, Menasha, Wis., died last week. He collapsed as he descended from a ladder while working at his home. He was 69 years of age.

Loses Three Fingers in Paper Machine

[FROM OUR REGULAR CORRESPONDENT]

BROWNVILLE, N. Y., August 6, 1928.—Ira Sanderson, of this village, a machine tender at the paper mill of Knowlton Brothers, was the victim of an accident in which three fingers were crushed when his hand was caught in a paper machine calender. That Mr. Sanderson was not fatally injured is considered remarkable and was due entirely to his presence of mind and quick action.

He was tending the machine and something occurred which made it necessary for him to reach near the rollers through which the paper was passing and his fingers were caught in the press. He quickly braced himself and exerted his full strength against the drawing power of the calender, literally tearing his fingers from the powerful clutch of the rollers. The ends of his first three fingers on the right hand were torn away and the fingers badly mangled.

In numerous accidents of this kind workers have been drawn into the machine and killed and usually the arm is crushed before the power can be turned off.

Boston Paper Trade Happenings

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., August 6, 1928.—B. I. Reider, vice-president and manager of sales, of the Victoria Paper Mills, Fulton, N. Y., spent several days during the week in sales conference with the Andrews Paper Company, of Boston, Mass., who are New England distributors of Victoria's Three Leaf toilet paper.

The Stone & Andrew Company has sent out folders of Resolute Ledger, a paper designed to stand up well under rough handling. This company has become distributor of Canterbury Laid and also Dilcol, for Dill & Collins Company. Salesmen of the Stone & Andrew Company have had considerable success with the D. & C. Idea-file, which has brought forth much favorable comment among their customers. The file shows a decidedly attractive lineup of various jobs done on D. & C. papers.

John Carter & Co., Inc., have made some changes in the arrangement of their stock-room to accommodate recently added lines, including Adirondack Bond and Adirondack Ledger. This company reports encouraging business in Albion Laid Ledger and Announcement, for which it is sole New England agent.

Roger S. Hubbard, for twenty years connected with John Carter & Co., Inc., has been promoted to the position of salesroom manager.

The T. C. Greene Paper Company reports that the business of its first year, which ended July 1, was successful.

Thomas C. Greene has receive a letter from George A. Dunning, president of the board of directors of the Advertising Club of Boston, appointing him chairman of the membership committee of the club.

Southern Merchants Issue Price Lists

[FROM OUR REGULAR CORRESPONDENT]

Atlanta, Ga., July 30, 1928—This month has seen the publication of several new price lists and catalogues by jobbers in this section.

Both the Birmingham and Atlanta divisions of Whitaker Paper Company issued catalogues showing new lines, including the new and improved Dickinson Offset manufactured by the American Writing Paper Company, which both houses have reported has moved unusually well. The Whitaker Paper Division at Atlanta has added Beckett Cover, Basic Folding Enamel and Whitehouse Cover, and both branches have added the New Albion Laid announcements and book paper line, a handsome deckle edged medium prived rag content sheet also manufactured by the Eagle-A Mills.

The newly formed paper house at Birmingham, the Strickland Paper Company, Inc., has brought out its first catalogue in which is listed very completely the lines of Hammermill Paper Company and S. D. Warren Company's lines, for which this company is agent for this territory. Lines have been carefully selected and the range is very complete for a new house operating the short time it has. Fine bonds and ledgers carried by this house are largely made up of private branded and watermarked papers, representing the highest standards of manufacture.

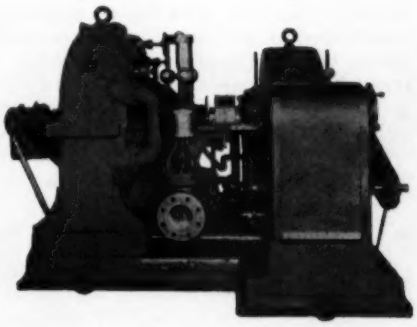
Hayward Beatty, the Southeastern sales solicitor for the American Writing Paper Company, has returned from another round of the merchants of the Carolinas and Florida, finding distribution of Eagle A brands wholly satisfactory among their merchant friends.

Burning Wood Refuse for Fuel

The Combustion Engineering Corporation, 200 Madison avenue, New York, N. Y., has recently published in "The Safety Valve," one of their house organs, an article with the above title written by J. H. Hinman and outlines the manner in which the wood using industries obtain fuel value from their mill wastes. Copies are obtainable from the Combustion Engineering Corporation.

The TERRY Paper Machine Drive

[Variable or Constant Speed]



Company, Algoma, Mich., where the turbine, a 250-horsepower unit, is equipped with a variable speed governor with a 6 to 1 speed range.

At the latter mill, the turbine operates on 115-pound initial steam pressure and exhausts against 5-pound back pressure. The simplicity and compactness of the unit, incidentally, enabled the Fletcher people to reduce their operating force by three men and to secure considerably greater production, by being able to drive the machine at higher speed than with the supplanted drive. That the installation paid is further evidenced by the fact that after a six months try-out of this initial turbine drive, a second such drive was ordered and is being installed at the present time.

At the Tumwater Paper Mills, Tumwater, Wash., one of the newer mills reputed to be thoroughly up-to-date, two non-condensing steam turbines of 200-horsepower capacity are in service, one driving the constant speed shaft and the other the variable speed member. The speed range is 4 to 1. Still another of these non-condensing turbine paper machine drives among the newer mills is that at the Southern International Paper Company, Camden, Ark. This is of particular interest, as when the mill is completed it will be one of the largest kraft mills in the country. Here, two 350-horsepower drive sets are installed, designed for 180-pound initial steam pressure, 40 degrees superheat and 30-pound back pressure, speed range 6 to 1

Paper Trade Journal 3-22-28

Again Proves Its Worth

—At the three more paper mills—the Fletcher Paper Company, the Southern International Paper Company and the Tumwater Paper Mills.

At the former, to quote the above clipping, "The simplicity and compactness of the unit, incidentally, enabled the Fletcher people to reduce their operating force by three men and to secure considerably greater production by being able to drive the machine at a higher speed than with the supplanted drive. That the installation paid is further evidenced by the fact that after a six months try-out of this initial turbine drive, a second drive was ordered and is being installed at the present time."

Information on the Terry Paper Machine Drive will gladly be sent on request.

The Terry Steam Turbine Company

TERRY SQUARE, HARTFORD, CT.
OFFICES IN PRINCIPAL CITIES
Steam Turbines + Gears + Shaft Couplings

T-1021

Ontario Paper Mills Running Near Capacity

Practically All Branches of Paper Industry Continue Active, With Exception of Coarse Paper Section—Present Year May Set New Record in Production and Sales—Board Mills Disposing of Their Product—Pulp Market Rules Somewhat Weaker

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ontario, August 6, 1928.—Although the wholesale paper business is in the throes of the holiday season, more stock is moving than was the case at this season last year. In fact the whole industry, both wholesale and manufacturing, is a good deal more active than it was at the holiday season a year ago and has been considerably less affected by the vacation period than it has been for some years. There has been a free movement of nearly all paper lines this summer, and, aside from news print, it looks as if the present year was going to set a new record in production and sales. It cannot be said, however, that wholesale paper firms or consuming firms are stocking heavily. But they are buying often and sales each month show a satisfactory record. There has been no speculative buying of paper either by jobber or printer for years and in some quarters it is predicted that the days when a wholesaler or printer would stock a carload or two of certain lines of paper and hold it for a rise in price, will not return. Among the distributors and the consumers the tendency is, and has been for a long time, to buy as the stock is required, knowing that the mills can always supply their demands and, as a rule, make quick delivery. Practically all the direct mill representatives and paper wholesale houses in Toronto report a well sustained demand for all classes of fine papers. Bonds, writings and ledgers are all selling well and there is a fairly good call for coated stock by catalogue and direct mail printing houses. Mills making these lines have orders booked ahead for several weeks and in the case of book paper, mills are running close to capacity and with orders on hand sufficient to keep them so for about two months.

All branches of paper manufacture throughout the province are active, with the possible exception of the coarse section, which is somewhat quiet, although kraft mills are busy and are extending their sales throughout the Dominion and in export quarters as well. The general run of wrapping and paper bags, however, is less active than it was earlier in the season. Business with the paper converters is keeping up well, there being a good call for envelopes, blank books and manufactured stationery generally. Under the stimulus of generally active business conditions throughout the province the paper box industry is enjoying prosperity and board mills, while only operating at around 75 per cent capacity, are readily disposing of their product. There is a good all-round demand for both folding and set-up boxes, while corrugated box manufacturers report a satisfactory volume of orders. Mills manufacturing grease proof, glassine and waxing papers are extremely busy and have been very little affected by the holiday season and the same may be said of light weight paper manufacturers who are operating close to capacity on tissues, toilets and specialty lines. The market for waste paper continues strong with a good call from the mills for stock and the collectors readily disposing of all stock they can get. All paper prices continue firm and no recessions are anticipated for the near future, at least.

The pulp market is showing little strength and is generally conceded to be a weak one. Paper mills continue to buy pretty much as they require the stock and some of them have been able to get their raw material at pretty attractive prices, although neither the paper mills nor those devoted to the manufacture of pulp alone are carrying any stocks.

The Northern Paper Mills, Ltd., Coppell, Ont., which is a subsidiary of the Northern Paper Mills, Ltd., of Green Bay, Wis., is now well under way. The company is operating several large camps and has completed a rossing mill which contains four large type rossing machines with a capacity equal to 22 cords of pulpwood every ten hours. The company was incorporated less than a year ago with Victor Lines, of Sault Ste. Marie, Ont., as manager. During that time large spruce pulpwood tracts have been purchased, headquarters buildings erected at Coppell, situated at mile 281 Algoma Central Railway, numerous camps built and at the present time 275 men are employed. Work is given to about as many more settlers from whom pulpwood is purchased. Besides the rossing mill, the company has several rossing machines located at other shipping points, barking all wood shipped to Green Bay. The saving in freight and a similar operation at destination largely compensates for the operation and it is the belief of the officials that, in the near future, all wood shipped to outside mills will be rossed before shipment. Four miles of railroad was built last fall into the main camp and the company operates its own engine with company owned cars. Until late this coming Fall the mill will run day and night to clean up on the wood of last winter's cut, now drying and awaiting the rossing process.

Algoma's Huge Expansion Program

It is understood that the total expenditure in connection with the newly formed Algoma Pulp and Paper Docks Company, of which the Hon. James Lyons, Sault Ste. Marie, Ont., is a director, will be around $15,000,000. This will include the mills, power development and other matters. The company had taken over the Austin and Nicholson timber and pulpwood limits with license to cut over 800 square miles, and this wood will be used in the operation of the mills. The site of the mill has not been definitely decided upon, the Hon. Mr. Lyons stated in Toronto, but it will be located at Michipicoten or Dalton, on the C. P. R. main line, with the odds in favor of Michipicoten. Dalton is the center of the pulpwood limits and Michipicoten is thirty miles away, but the matter of power enters into the deal, and it seems likely that Michipicoten will secure the plum. The concern will secure power from the Algoma District Power Company, which, the Hon. Mr. Lyons said, was anticipating the needs of the company in any development now being undertaken. While Mr. Lyons has received no definite advice yet as to the conclusion of the deal which will ensure construction of the mills, the flotation of stock was made in England lately and quite a lot of it was subscribed in Canada.

The Ontario Government Forest Department air service is organizing intensively for the fire hazard which, experience has shown, inevitably comes with the month of August and early September. Capt. W. R. Maxwell, director, has left for the North and will visit all posts in the new flying boat recently added to the service. There are 21 planes on duty this season, and so far the pilots are 1,500 flying hours ahead of the total attained last year up to this time. Last August planes were requisitioned for 371 operations, more than one-quarter of the season's total. This year there are additional responsibilities, because of the way in which prospectors are thrusting back the frontiers of mining development. Hundreds of miles from the nearest railroad, miners are at work around Favorable Lake and Sandy Lake, in the extreme northwest of the Province and not far from the Manitoba boundary. Here there are no lookout towers to assist in fire detection, and the air service is wholly responsible. Wherever prospectors go into the new country they create a fire hazard, and in that respect the 1923 season is without precedent. While the service is not in the business of rescuing lost mining prospectors, it has had to do a little humanitarian work now and then. A few days ago

If you stop to figure UTILIZATION COST

UTILIZATION COST

is determined by comparing the initial cost of a roll to the actual number of operating hours of service or the yardage run secured from the roll.

Keeping such a record prevents excessive roll costs.

You will understand why the Leading Converters find it Most Economical to use the

WALDRON Paper Rolls

Write for Your Copy of the INSTRUCTION SHEET On How A Paper Roll Should Be Run In

No loosely constructed roll, regardless of outside appearance or low price, can ever satisfy the keen buyer who figures utilization costs.

The majority of the leading embossers throughout the world, has proved over a period of more than 75 years, that Waldron Paper Rolls, by virtue of their superior construction and longer lasting quality, not only improve the embossing but substantially reduce the item of roll costs.

There are Waldron Rolls for Embossing Machines, Glassine Calenders, Coated Paper Calenders and for Heated Roll Embossing. Ask our engineers to make recommendations that will help reduce your roll costs.

JOHN WALDRON CORPORATION

MAIN OFFICE AND WORKS, NEW BRUNSWICK, N. J.

208 W. Washington St. CHICAGO

30 East 42nd Street NEW YORK

303 Lumbermens Bldg. PORTLAND, ORE.

Pilot George Philip, flying an H.S.2L Keystone, brought out from Port Hope, up on the Albany River, a prospector who had become badly crippled.

Hinde & Dauch Company Expanding

In order to extend their Hanna avenue plant in Toronto, Hinde & Dauch Paper Company of Canada have purchased from the Canadian Dyers' Corporation a large block of property with 328 feet flank of 150 feet on Hanna avenue, at a purchase price of $150,000. Eight houses and a store which are standing on the property, including Nos. 21 to 27 Liberty street, will be razed to make way for the Hinde & Dauch extension, which will be of mill construction, five stories high. Plans for the new building are already prepared and construction will be under way in September. The company considered several available sites in various parts of Ontario and finally decided on the Hanna avenue-Liberty street location as being the most suitable owing to its close proximity to the sources of supply of waste newspaper and other paper waste which is used very largely in the manufacture of the firm's products. They now manufacture jute and chip test container boards, fiber boxes, corrugated boxes and wall board, the capacity being fifty tons daily at the Toronto plant. The Trenton, Ont., plant of the company manufactures strawboard for corrugating purposes.

Spruce Fall Development Completed

Inaugurated over two years ago and just three months ahead of the time scheduled for completion, the huge development of news print mill and power by the Spruce Falls Power and Paper Company, Ltd., at Kapusasing, Ont., has been practically finished and the contractors are now packing up their equipment. There now remains only some additional work on the company's town site where already 300 houses have been built and are now occupied by the employees. The company has just awarded a contract for 40 more houses to be built this Fall, while the hospital and employees' club will also be completed within the next few months. Enquiry at the company's head offices in Toronto by the PAPER TRADE JOURNAL elicited the information that the paper and power end of the development is now complete, including the transmission line from Smoky Falls, fifty miles away, and the necessary generating plant at the Smoky Falls end. Two of the news print machines have already been installed and are in production, while the third will be running this month and the fourth by September 1, according to present plans. This equipment will give the Spruce Falls Company a total capacity of 500 tons of news print a day, while they also have a bleached sulphite productive capacity of 110 tons daily. It is not considered likely, however, that the ultimate capacity of the news print mill will be reached for some little time after the fourth machine is installed.

Wainwright Buys Don Valley Mill

One of the oldest paper mills in Canada changed hands a few days ago when the trustees of the Robert Davies estate, which for years have been operating the plant of the Don Valley Paper Company, Toronto, announced that they had sold the mill, equipment and good-will to Norman E. Wainwright. Transferal of the property has taken place and the Don Valley plant will shortly be operated by the new owner under the name of "Don Valley Paper Company, Ltd." Mr. Wainwright, through his long association with the paper industry in England, Canada and the United States, is widely known both in the sales and manufacturing branches of the paper industry. For the past six years he has been marketing the output of the Port Arthur mill of Provincial Paper, Ltd., and previous to that he was associated with both Provincial and the Howard Smith Paper Mills, Ltd., through his connection with the Canadian Export Paper Company in Montreal. Before coming to Canada he got his paper training with L. S. Dixon & Co., Ltd., paper manufacturers and merchants, London and Liverpool. For some years he was with the Butler Paper Corporation, Chicago. The Don Valley Mills manufacture covers, manilas, bristols, tags and specialty lines and it is Mr. Wainwright's intention to standardize the various classes and grades now being produced with a view to greater volume of production. Enjoying the esteem of the Canadian paper trade as a whole Mr. Wainwright launches his venture with the best wishes of his confreres in the paper business.

Howard Smith Form New Company

Alliance Paper Mills, Limited, is the name of the new company formed as the result of the taking over of the Lincoln Pulp and Paper Company, Merritton, Ont.; the Georgetown Coated Paper Company, Georgetown, Ont., and Ritchie & Ramsay, Ltd., coated paper manufacturers at New Toronto, by C. Howard Smith, head of the Howard Smith Paper Mills, and Harold Crabtree, Mr. Smith's managing director. The new company has just been granted a Dominion charter with a capital stock consisting of 30,000 cumulative preference shares of $100 par value and 200,000 common shares without nominal or par value. It is understood that Mr. Smith and Mr. Crabtree are buying the Lincoln Pulp and Paper Mills for their own account rather than the account of the Howard Smith Paper Mills. Ultimately it is considered likely that the Merritton mill will become consolidated with Mr. Smith's undertakings although no steps have been taken in that direction as yet. The Lincoln Pulp and Paper Mills operate at Merritton, Ont., where their head office is located, and at Maria, New Richmond and New Carlisle, Que., with R. Home Smith, of Toronto, as president. They are manufacturers of waxing, greaseproof, bonds, sulphite specialties, flour sacks, etc. They also have a productive capacity of 50 tons of sulphite pulp. This latest transaction means that the control of practically all the high grade paper production in Canada has passed into the hands of two groups—Smith-Crabtree and the Provincial Paper Mills.

Notes and Jottings of the Trade

The Toronto Paperboard Company has been granted a charter with an authorized capital of $500,000, and headquarters in Toronto, to manufacture, sell and deal in all kinds of paper, paperboard, pulpwood, etc.

A party of school teachers from Southern Ontario recently paid a visit to Iroquois Falls, Ont., and were shown over the plant of the Abitibi Power and Paper Company under the guidance of one of the officials of the company. They also inspected the company's hospital and townsite.

The completion of a gigantic engineering and construction project, a dock cut 650 feet inland out of the earth and solid rock at the plant of the Thunder Bay Paper Company, Port Arthur, Ont., is announced by Dominion Public Works officials. The slip cost over $500,000 and water was admitted into it recently for the first time.

About 250 of the employees and friends of the Lincoln Pulp and Paper Company, Ltd., Merritton, Ont., boarded special electric cars for Queenston Heights on July 30 and participated in the annual picnic. It was an old-fashioned basket picnic for the most part but the company provided tea and ice cream, together with a lot of prizes for the various games and athletic events. The outing proved a pleasant one for the mill workers and the executive staff were thanked for its part in the afternoon's fun.

J. F. Patton, of the Mead Patton Company, Ltd., Montreal, was a business visitor in Toronto a few days ago.

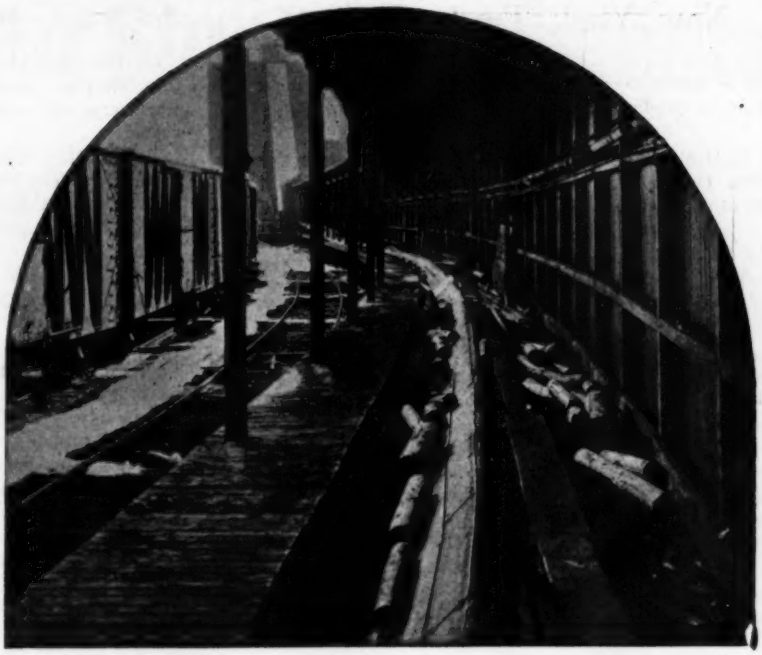
Victor Kinsman, of the Toronto office of the Spruce Falls Power and Paper Company, Ltd., is spending his vacation at Lake-of-Bays in the Muskoka region.

At a regular meeting of the directors of the Corrugated Paper Box Company this week in Toronto the directors declared the first quarterly dividend of $1.75 on the 7 per cent preferred stock to the shareholders of record on August 16, payable September 1, 1928. This $100 par stock was offered in May last. The earnings for the quarter ending June 30 were reported to be highly satisfactory and unfilled orders on hand are now the largest ever in the history of the combined companies.

Ontario creditors of the McGregor Paper Company, Montreal, wholesale paper dealers, now in financial difficulties, have received an offer of 42½ cents on the dollar. A number of the Ontario paper mills are on the list of creditors.

Jeffrey Chains for Every Service

Jeffrey Reliance Chain for drives, elevators and conveyors moving pulp mill materials.



An Unusual Job

Theory says, "A Cable Conveyor cannot follow a horizontal curved path because the tension pulls the cable out of the trough."

But here is a Jeffrey Cable Conveyor doing just that very job, following the curved spur of railroad track up to the mill.

And the photograph shows that the cable is doing the job well.

Jeffrey engineers often solve the "unusual" problem in paper and pulp mill material handling.

The Jeffrey Manufacturing Company

931-99 North Fourth St., Columbus, Ohio

New York	Rochester, N. Y.	Pittsburgh	Boston	Cleveland
Buffalo	Philadelphia	Scranton, Pa.	Cincinnati	Detroit
Utica	Milwaukee	Denver	Atlanta	Houston
Chicago	St. Louis	Salt Lake City	Birmingham	Montreal
Charleston, W. Va.				

51 YEARS OF SERVICE TO INDUSTRY

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MATERIAL HANDLING EQUIPMENT

Jeffrey Products

Elevators
Conveyors
Portable Loaders
Coal and Ashes Handling Equipment
Skip Hoists
Chains and Attachments
Sprocket Wheels—Gears
Crushers—Pulverizers
Sand and Gravel Handling, Washing and Screening Equipment
Locomotives
Coal Mine Equipment
Tipple Equipment
Ventilation Fans

New York Trade Jottings

Paul S. Hanway, secretary of the American Waxed Paper Association, is spending his vacation in New Hampshire.

* * *

H. S. Hohl & Co., and the Producers Linter Export Company, of New Orleans, La., has established a branch office at 1270 Broadway, New York.

* * *

The Gatti Paper Stock Corporation, of 41 East 42nd street, New York, has purchased the John A. DeVito Company, one of the oldest paper stock concerns in Boston, Mass.

* * *

J. A. Kavanagh, statistician of the American Paper and Pulp Association, is visiting the wall paper mills in Northern New York and Canada, in connection with the development of the statistical service of the association.

* * *

Louis Marcovitz, of Darmstadt, Scott & Courtney, Inc., dealers in paper mill supplies, returned to New York last Friday on the Cunard liner *Aquitania*, after several months absence in Europe in the interest of his organization.

* * *

The following companies have recently joined the American Paper and Pulp Association: Certain-Teed Products Corporation, 100 East 42nd street, New York; Fidalgo Pulp Manufacturing Company, Anacortes, Wash.; San Juan Pulp Manufacturing Company, Bellingham, Wash.; Linton Brothers & Co., Fitchburg, Mass.; Bay West Paper Company, Green Bay, Wis., and Keyes Fibre Company, Shawmut, Maine.

* * *

In the six months Mathieson Alkali earned $5.94 a common share, or nearly sufficient to cover the present $6 a share annual dividend rate. According to the Wall Street Journal, company interests predict there will be an increase in earnings in the second half so that it is likely the company will show more than twice the dividend earned. Small outstanding capital—only 147,207 shares—has made the stock responsive to buying and has been a factor in attracting an outside demand recently.

* * *

Production of the Freeport Texas Company for the three months ended June 30 amounted to 241,325 tons, the largest for any quarter in the corporation's history. The previous record was 230,350 tons in the quarter ended September 30 last year. The output for the June quarter represents a gain of 47,080 tons over the preceding quarter, and compares with 202,070 tons for the corresponding period of 1927. Freeport Texas is currently producing at record levels, and is said to have more orders on hand than at this time last year. Owing to the expiration of several low-priced contracts, the company is receiving a higher average price than prevailed a year ago. Exports are reported to be currently maintaining last year's record rate.

Sylva Paperboard Co. Co. Starts

SYLVA, N. C., August 6, 1928.—The plant of the Sylva Paperboard Company, Sylva's newest manufacturing enterprise, is now in operation, and is shipping paper daily.

A carload a day is being shipped now, and the production is being gradually increased. It is the plan of officials to ship at least eight cars daily. The plant now has orders from a box company which will keep it busy for the next 12 months, officials of the concern have said. The paper is used in the manufacture of boxes.

The paper is made from the chestnut chips from the extract plant and thus utilized material previously wasted. The paper, therefore, is in the nature of a by-product.

E. L. McKee, of Sylva, is in charge of the plant.

Straw Crop To Be Small

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, August 9, 1928.—It will not be encouraging news to straw paper manufacturers of Ohio to learn that this year's wheat crop will amount only to 25 per cent of the last five-year average.

The smallest wheat crop since 1901 means also the smallest straw crop. The bulk of Ohio's crop this year is being harvested right now in a few counties in northwestern Ohio, and in the Toledo district, according to a report to state agricultural authorities.

Only an occasional field survived the winter in western Ohio or in this section of the state, the Miami Valley.

The report from Columbus states: "The seed requirement in Ohio is about four and a half million bushels. We have in the state probably enough wheat to supply our needs, providing a method for its distribution is worked out. Soft red wheat can also be introduced from surrounding states to the north and east, providing certain precautions are taken.

"Wheat from Pennsylvania should be inspected for two noxious weeds, garlic and mustard. Much of the wheat from Michigan and New York can be used, with the exception of the soft white varieties. Only as a last resort should Ohio farmers plant the hard red winter wheat from the west."

As a matter of fact, Ohio's straw crop always has been supplemented by supplies from Indiana, Illinois and Michigan and these states will be called on to furnish the supplies needed by the mills in Ohio and the states mentioned.

Reports at hand indicate, however, that western states will be called upon this year to supply much of the raw materials for the Central West straw paper mills and kindred industries.

The public here is interested in the experiments with corn stalks which have continued for several years but which appear to be approaching success. The Miami Valley is a great corn-growing section and the supply of stalks would be ample for all purposes. Experiments also are in progress in the commercial use of other wastes in which the paper industry may prove to be the beneficiary.

Goes With Parker-Young Co.

HUDSON FALLS, N. Y., July 30, 1928.—George S. Witham, Sr., for a number of years general superintendent of the local mills of the Union Bag and Paper Corporation, and widely known in the pulp and paper industry through his inventions of pulp and paper mill equipment, has accepted a position as general superintendent of the papermaking department of the Parker-Young Company plant at Lincoln, N. H. Mr. Witham has taken up the duties of his new position in which he will have complete supervision of the paper mill at Lincoln.

Mr. Witham is a son of George S. Witham, Sr., general manager of the Union Bag and Paper Corporation, and until he resigned from the Union Bag several months ago he had been associated with his father in the conduct of the Hudson Falls mills for a number of years. After leaving the Union Bag and Paper Corporation Mr. Witham accepted an executive position with the Stevens & Thompson Paper Company at Middle Falls.

West Jersey Paper Co. Gives Employees Vacation

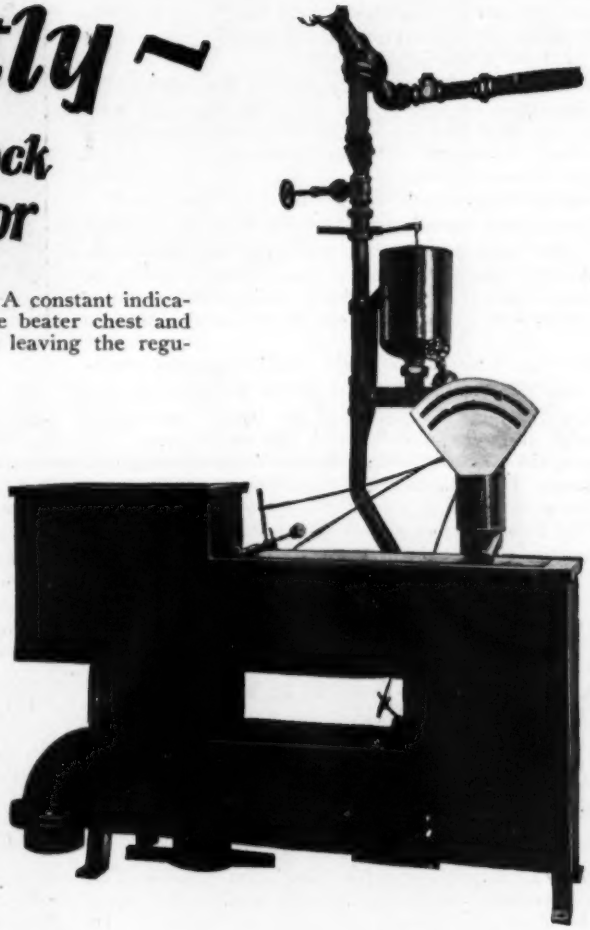
CAMDEN, N. J., August 6, 1928.—The West Jersey Paper Manufacturing Company, corner of Front and Elm streets, in line with its employment program which it established some time ago, beginning with life insurance and following with a bonus plan, is following now by shutting down on August 6 to August 13 and giving all employees a week's vacation with pay.

The company states: "We feel that we cannot devote too much time to the education, development and reward of our employees, and are more than satisfied with the increased efficiency since we have started our program."

Control Your Stock Consistency

Instantly ~

With the DeZurik Stock Consistency Regulator



Just as easy as looking at a pressure gauge. A constant indication of the density of stock coming from the beater chest and a constant indication of the regulated stock leaving the regulator.

All stock required for the paper machine is regulated, and immediate correction made if the stock being furnished is not the right density. Water is added instantly for any density of stock after all the stock passes the first detector. Any adjustment necessary can be made by a turn or two of a bolt.

With the DeZurik Stock Consistency Regulator no stock goes over the machine while the valve is being closed or opened—no stock is out of balance with the weight required for a particular run. The operation is instantaneous—due to the exclusive features in design and construction of the DeZurik Stock Consistency Regulator.

No power is required for the DeZurik Stock Consistency Regulator. It uses none whatever, while others usually operate by an electric motor.

Unlike other regulators, it has its own constant water head control—a very important feature since water pressures vary in different mills.

The decided advantages of the DeZurik Stock Consistency Regulator warrant your careful investigation of this device now. Patented under U. S. Patent No. 1,669,412, it is well built along the quality lines of other Valley equipment.

Let us tell you in detail about the exclusive features of the DeZurik Stock Consistency Regulator. Write today for complete information.

VALLEY IRON WORKS CO.

Machinery for Paper and Pulp Mills

APPLETON WISCONSIN

New York Office: 305 Madison Avenue

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TAPPI Fall Meeting Features

While the Indian word Wausau literally means "far away," yet a glimpse of the map of Wisconsin will show this enterprising city located in the very heart of the state, easily accessible from Chicago and Milwaukee by a night's train ride or by a day of automobile travel over concrete roads and through a country of beautiful lakes and woods.

It was in 1839 that the frontier logging camps first located along the Wisconsin River near the present site of Wausau. When the village was chartered as a city in 1872 the predominant industry was lumbering. It was also an Indian trading post, isolated from neighboring communities by forests of virgin timber and forced to haul merchandise over land from the nearest railroad point.

Since those pioneer days Wausau's industries have been diversified until today there are sixty-five manufacturing concerns located in the city. The population has grown to nearly 25,000 and the progressive spirit of the citizenship is manifested in the beautiful and substantial character of the business and residential districts.

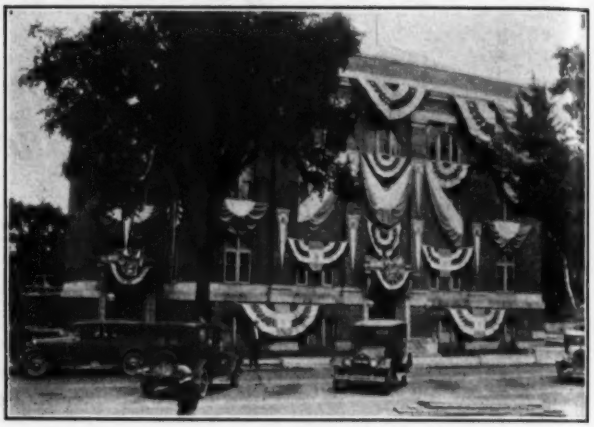
The Elks' Club, where many of the TAPPI meetings will be held, is a new structure well planned for the accommodation of such meetings as this. In addition to the large reception and meeting rooms, there are alleys for those who wish to bowl, committee rooms, and a ball room large enough to accommodate four hundred guests. The Wausau Club will also be used for luncheons for the visiting ladies. It is a beautifully appointed building and, like the Elks' Club, is within a block of the hotel and convenient to the shopping district of the town.

Aviation for TAPPI Members

On the southern edge of Wausau is the Alexander Airport, a rolling field of one hundred acres situated on the banks of the Wisconsin River and therefore available for seaplanes as well as landplanes. This field, donated to the city by Ben and J. S. Alexander, is fully equipped with hangars and other facilities. John P. Wood, a Wausau pilot, has just come into prominence by winning first place in the national Ford Reliability Tour. It is possible that he will pilot some of the TAPPI guests for short flights during their visit here.

The D. J. Murray Golf Trophy

The Country Club is located a few miles south of town. This club has a picturesque nine hole golf course which will be available for play during the meeting and on which there will be a tournament for those who wish to enter for the D. J. Murray cup. The course will be open to the visiting ladies also.



ELKS CLUB, WAUSAU

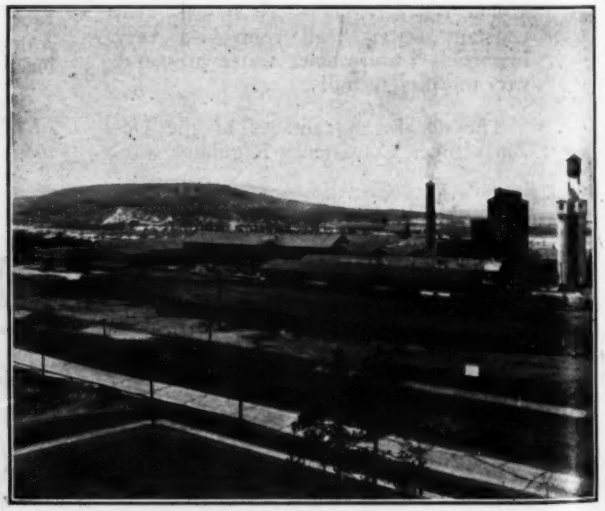
About one-half mile south of the Country Club lies Rothschild Park, a natural beauty spot of virgin pines high on the banks of the Wisconsin River. During the winter months this park is a recreational center for the winter Frolic, an annual event which has given Wausau the name of "The St. Moritz of Wisconsin." On the last afternoon of the TAPPI meeting this park will be the scene of a typical "North Woods" program, including log rolling, lumbermen's songs, landing human fish, Indian dances and the like.

Wausau—A Paper and Pulp Center

Wausau's interest in pulp and paper manufacture is exemplified by the fact that this city is the home of seven presidencies, five vice presidencies, four secretary-treasurerships, and three managerships of paper mills. It is the residence of D. C. Everest, president of the A. P. & P. A. and an actively interested member of TAPPI. In the vicinity of Wausau there are eighteen TAPPI members, all of whom are actively planning and working to make the fall meeting an unusually interesting and successful one.

Six miles south of Wausau, in the village of Rothschild, is the Marathon Paper Mills Company, producing 110 tons daily of

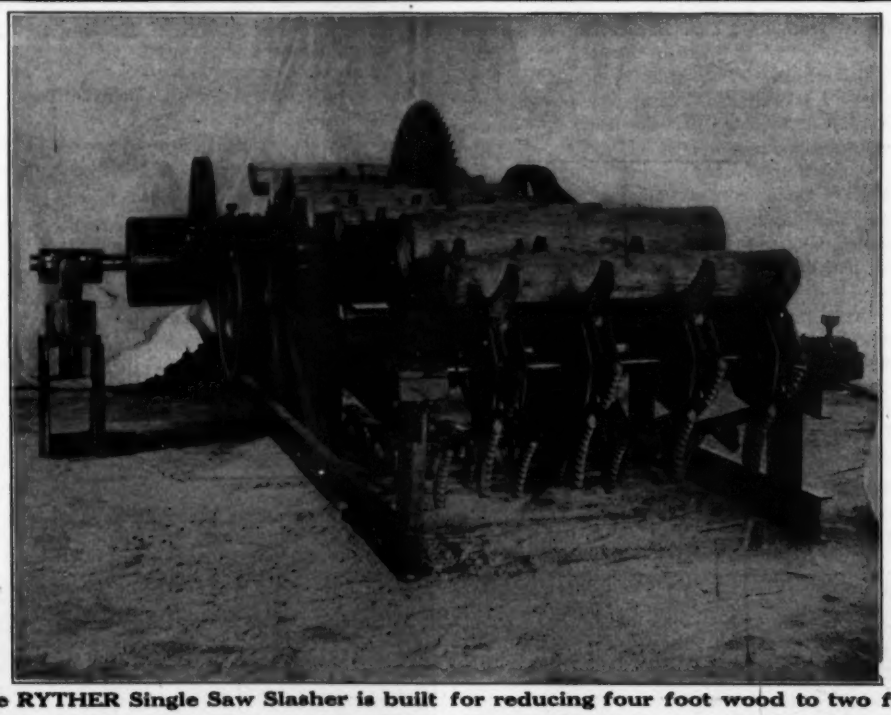
WAUSAU CLUB, WAUSAU



MARATHON PAPER MILLS CO., ROTHSCHILD

RYTHER AND PRINGLE COMPANY CARTHAGE N.Y.

SINGLE SAW SLASHER

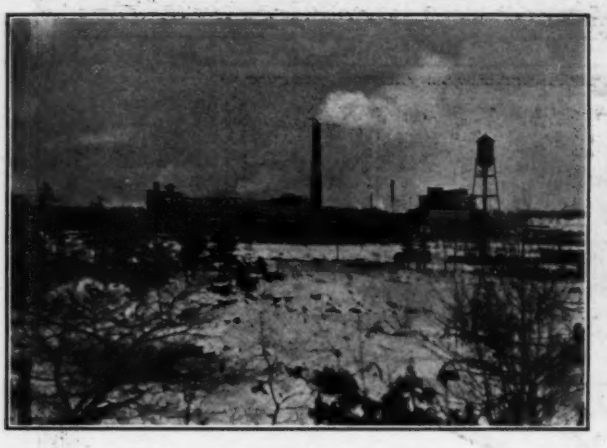


The RYTHER Single Saw Slasher is built for reducing four foot wood to two foot lengths. The construction is of steel throughout. The average capacity of the unit is twenty-five cords per hour and twenty-five horsepower is required for operation. A direct connected motor drive can be provided. The arbor design can be altered and the equipment used for trimming four foot wood to length if desired. This slasher may be combined with any cutting up system or arranged for hand feeding direct from cars or platform.

FOR CANADA REFER

CANADIAN INGERSOLL-RAND COMPANY, LIMITED

10 PHILLIPS SQUARE, MONTREAL, P. Q.



MOSINEE PAPER MILLS, MOSINEE

ROTHSCHILD PARK, ROTHCHILD

bleached sulphite pulp and about 150 tons of sulphite, kraft and ground wood papers and boards. There are two fourdriniers, one Yankee, and a five cylinder paper machine. Among the interesting developments in this mill is the sulphite waste liquor investigation now being carried on by Guy Howard and for which a pilot plant has just been put into operation.

Seven miles south of Rothschild Olai Bache-Wiig established the first sulphate mill in the United States in the year 1910. Ever since its institution the Mosinee Paper Mills Company has been a leader in the kraft field, taking advantage of new developments and producing papers of such quality that the name of Mosinee Kraft is a by-word in the industry.

Turning toward the north in Wausau a point of interest is the plant of the D. J. Murray Manufacturing Company, widely known manufacturers of pulp and paper mill machinery. E. M. Bassler, manager of this concern, is an active member of TAPPI and will have an exhibit and demonstration of interest to the convention.

The Wausau Paper Mills Company, located six miles north of Wausau, will be of special note to those who are interested in the generation of steam. This company has just completed a new high pressure boiler plant, fired with powdered coal. The inspection of this plant and of the pulp and paper mill will occupy a part of one afternoon during the meeting.

Ladies to See Where Silver Fox Furs Flourish

The visiting ladies will be interested in the fact that Wausau is an important center of the famous silver black fox breeding industry. There are numerous ranches within a few miles of the city and it is estimated that Marathon County supplied over a million dollars worth of pelts last year.

Visitors to the Fall Meeting in Wausau are assured of an unusually interesting and instructive program, the full details of which will appear in a later issue of the PAPER TRADE JOURNAL. Favorable railroad rates and excellent automobile travel are bringing a widespread interest in the meeting. Ample accommodations are being prepared and plans are under way to see that the visiting ladies have no idle moments. Further information may be obtained by writing to Allen Abrams, General Chairman, Rothschild, Wisconsin.

Beckett Paper Co. To Make Improvements

DAYTON, Ohio, August 9, 1928.—It is reported the Beckett Paper Company of Hamilton is considering a huge project which will call for the construction of an addition to the company's finishing room. Plans for the improvement have been partially completed but have not been made public, it is understood.

The Beckett Company is one of the largest and oldest mills in Hamilton. This proposed improvement, by the way, is only one of several that are under way in Hamilton and which are doing much to put forward this busy industrial center. The population of Hamilton has increased most substantially since 1920 and is now above the 42,000 mark.

The Black-Clawson Company's recent extensions to its paper-machinery-making plant is another of the more important additions to the industrial development of the city. The company is expending a large amount of money in adding improvements.

ALEXANDER AIRPORT, WAUSAU

AERIAL VIEW, WAUSAU

An Exasperated Superintendent *Revolutionized an Industry!*

TWENTY-FIVE years ago we were making transmission belt . . . as good as any belt that was on the market. We had hundreds of satisfied customers. One belt user, however, could not be satisfied.

In final desperation he came to us. "Make me a belt" he demanded, "the best that can be made, regardless of cost."

To satisfy him we made a special belt. It was away out of proportion with belts of that time. The cost was prohibitive. We shipped the belt and thought we had lost a customer.

A while later he ordered the same kind of belt for another drive. He told his friends about the belt and orders began to arrive. It was an instant success. We called it Condor Belt—the Original Red Friction Surface Belt. We learned that there was a market for a belt of such high quality.

Created merely to fill an emergency, Condor Belt became then . . . as it is today, the standard of belt comparison.

Condor BELT

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Power Plant Section

Reducing Power Costs Through Unit Treatment

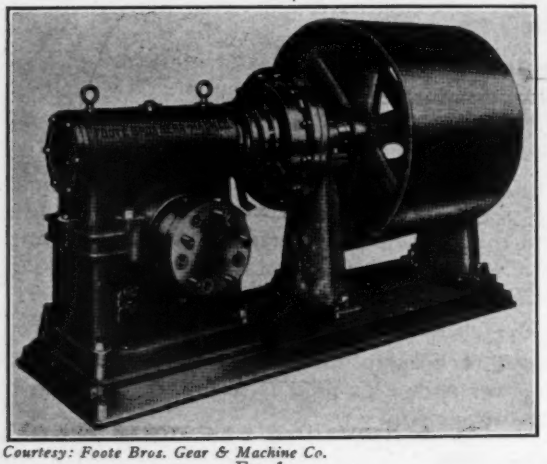
Conducted by REGINALD TRAUTSCHOLD, Consulting Engineer

Modernizing the Mill and Power Plant

Speed Reducer Applications

With the paper industry in the United States alone employing now well in excess of a million motor horsepower, 30,000 motors averaging 34 horsepower in capacity rating, which run at a considerably higher speed than can be effectively employed in the mills without substantial reduction, some conception can readily be formed of the important part played by the speed reducer in modernizing the mill and power plant. Add the extensive use of steam turbines and other high speed power units and almost every mill in the country is interested in this modern and highly efficient device for making economical use of the power service.

Various types of these units have already been described in these columns and a good many pictorial illustrations of typical speed reducer applications presented, but the speed reducer question is such a live one and exerts such influences in the minimizing of production costs that the present discussion can well cover much the same ground and by describing and illustrating further applications contribute something of pertinent interest to the paper mill, large or small. Recommendations will not be attempted, rather practices cited by indicating the character of the drives featured and the general variety of speed reducer employed.



Courtesy: Foote Bros. Gear & Machine Co.

FIG. 1

Standard worm gear, clutch and taper pulley drive assemblage designed for paper mill service.

The delivery of power from motor, turbine, line shaft or almost any other rotating power unit to machine or other power driven device is very apt to present a logical and suitable opportunity for a speed reducer application, so a complete list of proper uses for these devices would entail the consideration of virtually every power actuated unit in and outside the mill and power plant. However, of chief interest, doubtless, are the applications to the paper machine proper, Fourdriniers and cylinder machines. This is particularly so because of the very much higher machine speeds quite generally employed at the present time. Where old style paper machines operated at from 100 to 300 feet per minute, the more modern ones run many times as fast, as high as 1,400 feet per minute.

The drives are of two general varieties, the mechanical with steam turbine, steam engine or electric motor as the prime mover and the electrical drive. The former still includes the great bulk of the paper machines in operation today and whatever its variety presents opportunities for distinctly appropriate speed reducer applications. If a constant speed engine with step or taper cone pulleys is employed, the speed regulation can better be effected through a suitable speed reducer unit. The same is true if a geared turbine of either the constant-speed or variable-speed type is used. Also, if an electric motor, either direct connected or belted to the back line shaft of the paper machine, is the prime mover.

Courtesy: Gears & Forgings, Inc.

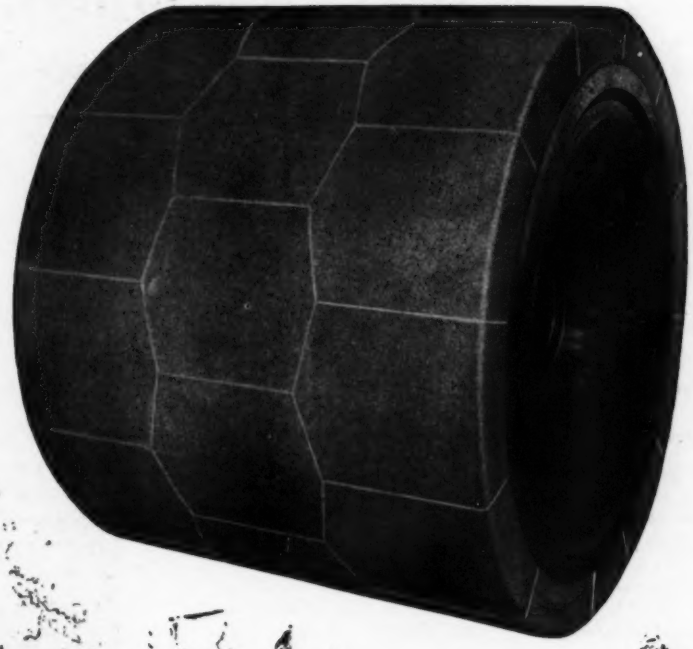
FIG. 2

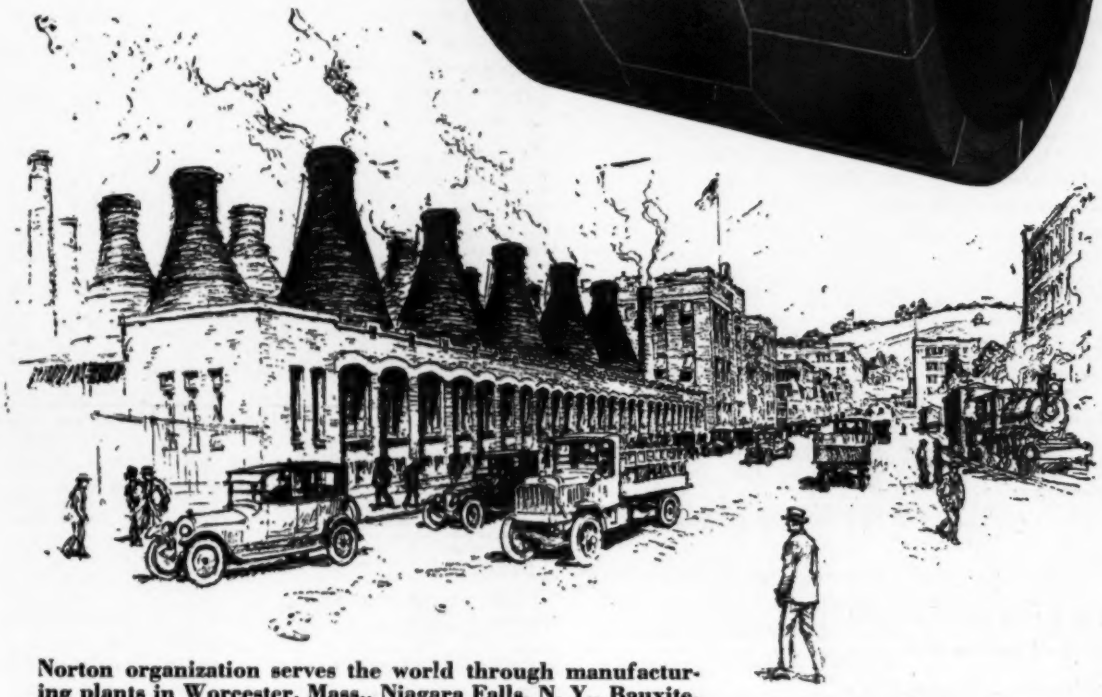
Herringbone gear speed reducer driving calender at the Champion Coated Paper Co.

On the slow speed machines, powered from a transverse shaft, bevel gears, in combination with a taper pulley and clutch, have been considered more or less standard for delivering the power from the main drive shaft to the various section rolls of the paper machine, but with the introduction of the much higher speeds decided objections to the construction have become apparent. The construction is excessively noisy at high speeds, vibration is pronounced, the gears wear out rapidly and the bearings cause much trouble. Maintenance costs and breakage expenses are high, resulting in costly shutdowns and repairs.

Norton Grinding Wheels

The NORTON PULP-STONE is one of scores of Norton abrasive products made to meet specifically the needs of industry.





Norton organization serves the world through manufacturing plants in Worcester, Mass., Niagara Falls, N. Y., Bauxite, Ark., Hamilton, Ont., La Courneuve, France, and Wesseling, Germany.

NORTON COMPANY, WORCESTER, MASS.

Canadian Trade Now Supplied from Canadian Plant

NORTON

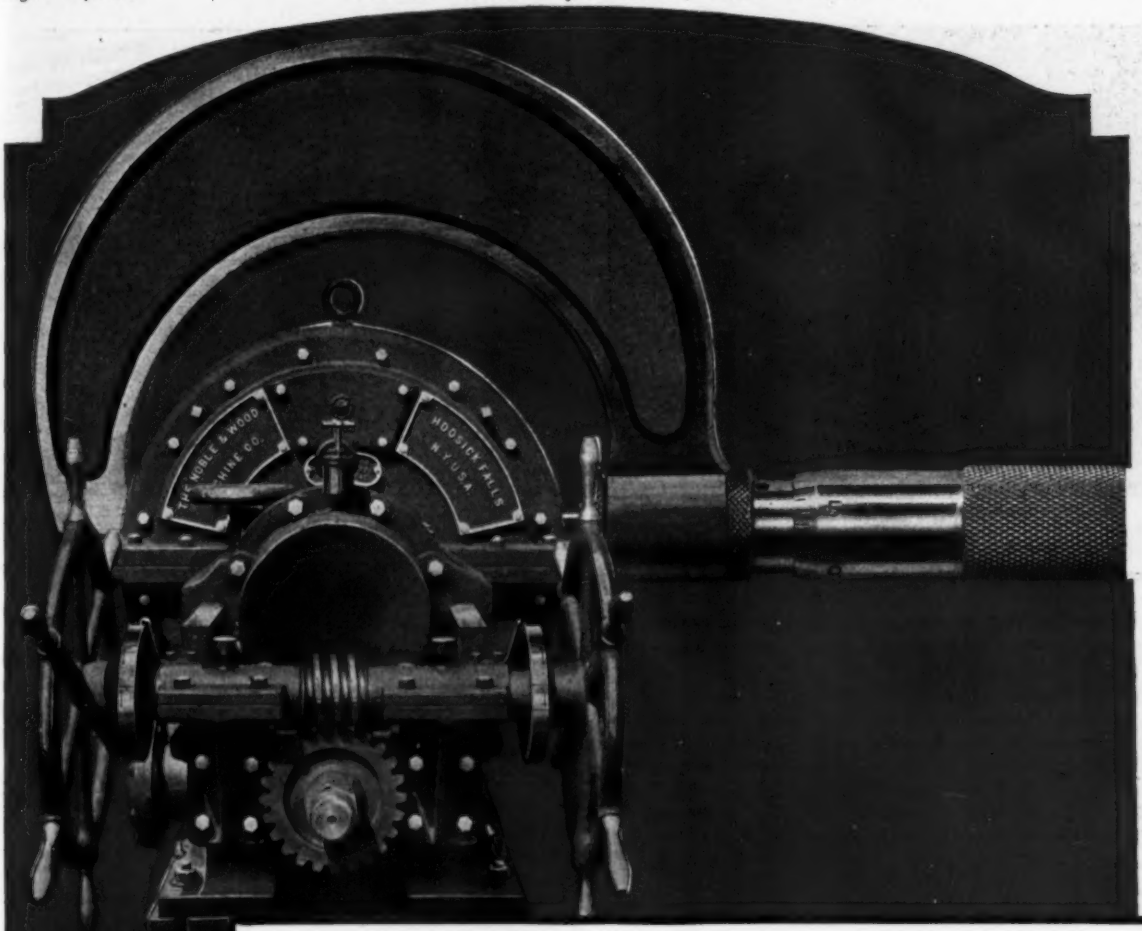
Grinding Wheels
Grinding Machines

Refractories-Floor and Stair Tiles

SOME TYPICAL WORM GEAR SPEED REDUCER INSTALLATIONS[1]

Establishment	Drive Service	Speed Ratio	Power Rating
Cons. Water Power & Paper Co., Wisconsin Rapids, Wis.; Biron, Wis.	Bleacher	9¾ to 1	50 hp. at 900 r.p.m.
	Bark distributor	30 to 1	3 hp. at 860
	Repulper	19½ to 1	3 hp. at 1,200
Claremont Paper Co., Inc., Claremont, N. H.	Stock agitators	11 2/3 to 1	25 hp. at 1,200 r.p.m.
	Line shaft	24½ to 1	10 hp. at 1,200 r.p.m.
	Agitators	24½ to 1	7½ hp. at 100
	Agitator	45 to 1	5 hp. at 1,200
	Agitator	40 to 1	15 hp. at 1,200
	Agitators	35 to 1	5 hp. at 140
	Agitators	24½ to 1	24 hp. at 86
Deerfield Glassine Co., Deerfield, Mass.	Embosser	7¾ to 1	7½ hp. at 1,800 r.p.m.
Everett Pulp & Paper Co., Everett, Wash.	Electric sectional paper mach. drive	13 2/3 to 1	40 & 60 hp. at 1,150 r.p.m.
Great Northern Paper Co., Millinocket, Me.	Sliver screens	60 to 1	10 hp. at 755 r.p.m.
Groveton Paper Co., Groveton, N. H.	Bleachers	9¾ to 1	50 hp. at 1,200 r.p.m.
	Agitators	60 to 1	5 hp. at 600
	Stock chest agitators	3⅝ to 1	30 hp. at 1,200
	Cylinder deckers	60 to 1	5 hp. at 900
	Pulp thickeners	60 to 1	5 hp. at 900
Hammermill Paper Co., Erie, Pa.	6 10-plate diaph. screens	7¾ to 1	15 hp. at 1,150 r.p.m.
	5 pulp thickeners	11 2/3 to 1	25 hp. at 865
The Hamersley Mfg. Co., Garfield, N. J.	Paper machine stock inlet	50 to 1	1 hp. at 800 r.p.m.
W. C. Hamilton & Sons, Inc.	Agitators, coating machine, stuff chests and winders	7¼, 9 2/3 & 22½ to 1	5 to 10 hp. at 900 & 1,200 r.p.m.
Harmon Paper Co., Brownville, N. Y.	Embosser	4 3/7 to 1	5 hp. at 1,800 r.p.m.
International Paper Co., Three Rivers, Que.	Electric sectional paper mach. drive	14½ to 1 to 30 to 1	Worm speeds from 500 to 2,000 r.p.m.
Jessup & Moore Paper Co., Wilmington, Del.	Agitators	9 2/3 to 1	15 hp. at 1,160 r.p.m.
	Agitators	14½ to 1	10 hp. at 840
Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.	Belt conveyor	50 to 1	
Kellogg Box Board Co., Chicago, Ill.	Beater	40 to 1	2 hp. at 1,150 r.p.m.
Mead Pulp & Paper Co., Chillicothe, Ohio.	Paper screens	3⅝ to 1	10 hp. at 1,160 r.p.m.
	Agitator line shaft	15 1/3 to 1	40 hp. at 860
	Soaking tank agitator	13 2/3 to 1	25 hp. at 865
Menasha Printing & Carton Co., Ashland, Wis.	Bleachers	13 2/3 to 1	60 hp. at 1,160 r.p.m.
Munising Paper Co., Munising, Mich.	Agitators	29½ to 1	15 hp. at 860 r.p.m.
	Flat screens	6 3/5 to 1	30 hp. at 1,200
	Bleach washer	14½ to 1	5 hp. at 1,200
	Repulper	14½ to 1	5 hp. at 1,200
National Paper Products Co., Stockton, Cal.	Flat screens	6 5/6 to 1	5 hp. at 1,160 r.p.m.
Nicolet Paper Co., De Pere, Wis.	Main line shaft	11 2/3 to 1	75 hp. at 5,200 r.p.m.
	Maine line shaft	11 2/3 to 1	90 hp. at 4,450
Northern Paper Mills, Green Bay, Wis.	Wet machine	17½ to 1	30 hp. at 1,200 r.p.m.
Oxford Miami Paper Co., West Carrollton, Ohio.	Pulp washer	13 2/3 to 1	20 hp. at 1,160 r.p.m.
	Rotary screen washer	3⅝ to 1	7½ hp. at 1,160
	Rotary washer	35 to 1	5 hp. at 1,160
	Soda ash mixer	25 to 1	5 hp. at 1,160
	Soda ash mixer	113 to 1	5 hp. at 1,160
	Soda ash mixer	113 to 1	7½ hp. at 1,160
	Dust screen	9 2/3 to 1	5 hp. at 1,150
	Conveyor	60 to 1	3 hp. at 870
Rainier Pulp & Paper Co., Shelton, Wash.	Bleachers	13 2/3 to 1	60 hp. at 1,160 r.p.m.
Rex Paper Co., Kalamazoo, Mich.	Washer	13 2/3 to 1	15 hp. at 1,150 r.p.m.
	Washer	13 2/3 to 1	30 hp. at 1,750
Rhinelander Paper Co., Rhinelander, Wis.	Bleachers	13 2/3 to 1	60 hp. at 1,120 r.p.m.
Southern International Paper Co., Camden, Ark.	Beater chest agitator	15½ to 1	20 to 30 hp. at 1,150 r.p.m.
	Diffuser chests	15½ to 1	
	Wet room agitators	15½ to 1	
Spruce Falls Power & Paper Co., Kapuskasing, Ont.	Vertical agitator shafts	15 1/3 to 1	40 hp. at 1,200 r.p.m.
	Knotter screens	30 to 1	2 hp. at 685
	Deckers	9 2/3 to 1	3 hp. at 1,160
	Sulphite chests	24½ to 1	10 hp. at 685
	Screening chest	19½ to 1	10 hp. at 685
	Elevator	29½ to 1	25 hp. at 690
Thunder Bay Paper Co., Ltd., Port Arthur, Ont.	Repulpers	19½ to 1	15 hp. at 860 r.p.m.
	Groundwood knotters	19½ to 1	10 hp. at 860
	Sulphite knotters	19½ to 1	10 hp. at 860
	Machine chest agitators	50 to 1	15 hp. at 860
	Bull screens	19½ to 1	5 hp. at 344
	Conveyors	19½ to 1	15 hp. at 450
	Bark distributor	30 to 1	5 hp. at 860
	Beadle mixer	30 to 1	5 hp. at 860
Union Bag & Paper Corp.	11 stock chests and agitators	7¾ to 1	25 hp. at 800 r.p.m.
West Virginia Pulp & Paper Co., Piedmont, W. Va.	Suction box vibrator	60 to 1	½ hp. at 720 r.p.m.
	Agitator	11 2/3 to 1	25 hp. at 720
York Haven Paper Co., York Haven, Pa.	Stock chest agitator	35 to 1	3 hp. at 1,750 r.p.m.

[1] Supplied by De Laval Steam Turbine Co.



Micrometer Precision
in Jordan Adjustments

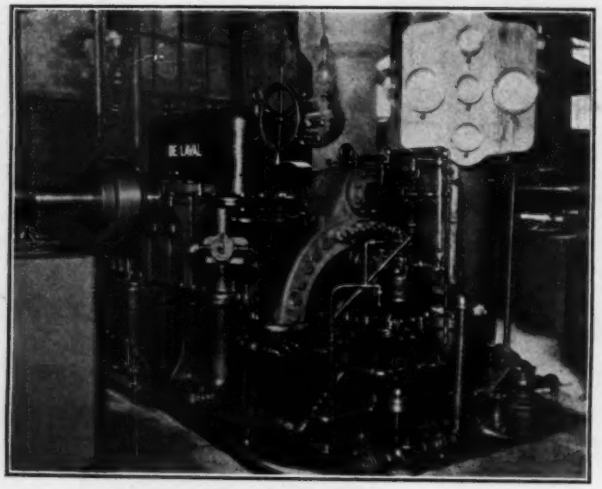
The Noble & Wood Precision Thrust permits regulation of plug settings to the thousandth part of an inch, clearly shown on an easily read dial. Further,—plug settings can be recorded and duplicated again and again on specific stock.

Guesswork is eliminated; personal judgment is guided and balanced by simple mathematics.

In mills where high standards are maintained such precise control is an asset of inestimable value. Most of the industry's foremost mills have standardized on this type of equipment.

Any Noble & Wood Jordan can be furnished with Precision Thrust. We welcome your inquiries for full details.

NOBLE & WOOD
MACHINE COMPANY
Hoosick Falls New York



Courtesy: De Laval Steam Turbine Co.

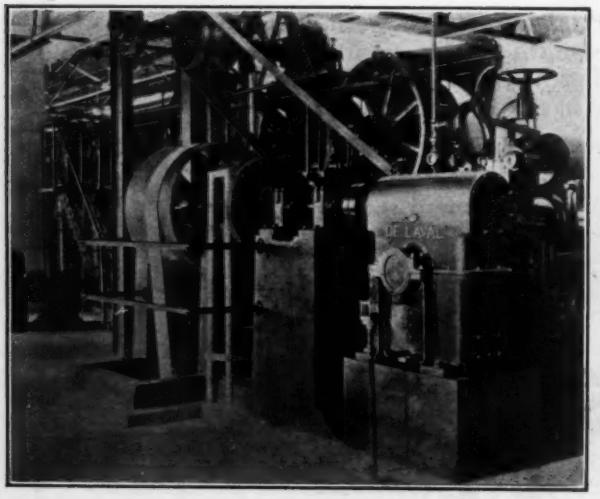
FIG. 3

400 horsepower steam turbine driving paper machine through a worm gear speed reducer at the St. Regis Paper Co.

For the mill sticking to this general arrangement of drive, a standard speed reducer unit has been developed consisting of an efficient worm gear speed reducer with clutch, magnetic or friction, and taper pulley compactly mounted on a single base plate. These units are made in various sizes and speed ratios, are comparatively inexpensive, and obviously can be installed with a minimum alteration to existing layouts. A 75 horsepower unit, costing $1,195.50, is said to entail a total operating cost per day, based upon 24-hour service over a period of five years, of 60 cents or less. This estimate covers the following items:

1—Depreciation, based on 10 year life	$0.12	per day
2—Interest on investment at 6 per cent	.195	
3—Expense for oil, 90 gallons per year	.20	
4—Repairs (1 worm gear ring in 5 years, and labor)	.066	
5—Lubrication labor (3 hours per year)	.01	
	$0.591	per day

If the oil is filtered and re-used, the operation cost per day will be about 40 cents. The units are highly efficient, well over 90 per cent, and are mentioned first for the reason that they are particularly applicable to the needs of the mill adhering to the old style bevel gear and taper pulley drive.



Courtesy: De Laval Steam Turbine Co.

FIG. 5

Close-up worm gear speed reducer drive of third section of paper machine, Watervliet Paper Co.

Courtesy: De Laval Steam Turbine Co.

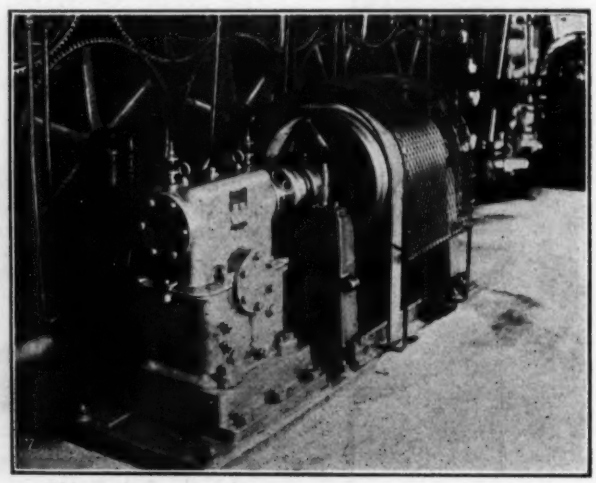
FIG. 4

Worm gear speed reducers driving sections of paper machine at the Watervliet Paper Co.

Herringbone Speed Reducer Calender Drives

A calender speed reducer drive of considerable interest, in that the satisfaction it has given must have been of high order, is that employed at the Champion Coated Paper Company. It consists of a herringbone speed reducer gear mounted between the driving motor and the calender, a simple, compact and eminently efficient setup. The motor is of the variable speed, direct current variety, connected to the speed reducer through a flexible coupling. The reducer unit is connected to the bottom roll of the calender, outside of which is the flange pulley, on the roll shaft, for driving the feeder roll. The electrical control of the machine, furthermore, is exercised through the agency of a push button automatic switch board control.

This convenient method of control serves a range of paper speeds from about 50 to 700 or more feet per minute. Speeds of 1,000 feet per minute have been employed, though customarily the maximum speed is around 700 to 850 feet. Sixteen of these drives were installed during 1924, ten during 1926, and eight more about a year ago, making a total of thirty-four calenders equipped with herringbone speed reducers and electrical control in this one



Courtesy: Cleveland Worm & Gear Co.

FIG. 6

Well guarded worm gear drive at the Provincial Paper Mills, Ltd.

by what

Standard of comparison do you compare beater performance?

Practically all of the modern types of beaters will show good results if you compare them with the beater of five years ago.

The recent development of beating methods made paper mills begin experimenting with the so-called fast traveling beater. Naturally—by comparison with beaters of five years ago—they obtained satisfactory results.

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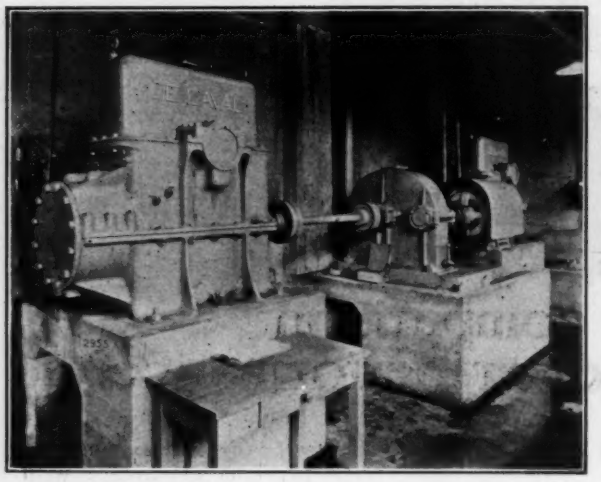
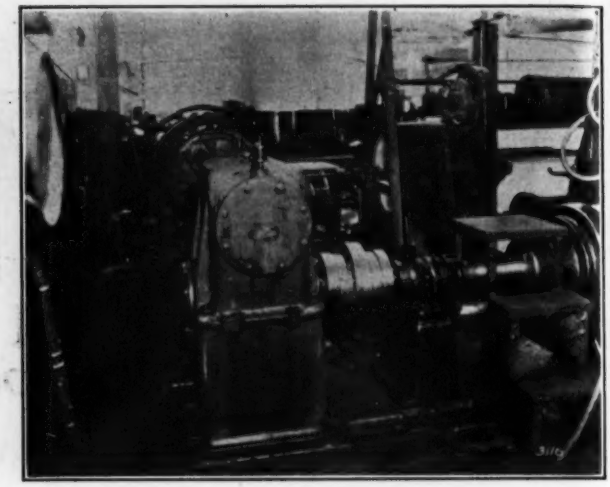


Courtesy: De Laval Steam Turbine Co:

FIG. 7

Worm gear speed reducer drive of stock agitators at the Camas plant of Crown Willamette Paper Co.



Courtesy: Cleveland Worm & Gear Co.

FIG. 8

Worm gear speed reducer in calender drive, Marathon Paper Mills Co.

plant. Their use is said to have effected an increase of approximately 25 per cent in paper calendered and what is even more striking is the fact that owing to the decreased strain on the operators, the number of threaders employed has virtually been cut in two. By the elimination of paper breakage, substantial savings have also been realized, for it is reported that close to 90 per cent of the waste paper from this cause has been done away with.

The cost of maintenance and power consumption attributable to this type of drive has, naturally, also proved a question of very considerable importance. A saving, as compared with the costs entailed for the belt and spur gear drives formerly employed for the calenders, of from 15 to 20 per cent, has been realized.

The same type of drive is used for four calenders at the Mead Pulp and Paper Company, the largest calender being one of 136 inches and the smallest one of 70 inches. At the Champion Coated Paper Company, the numerous calenders equipped with these drives vary in size from 40 to 80 inches.

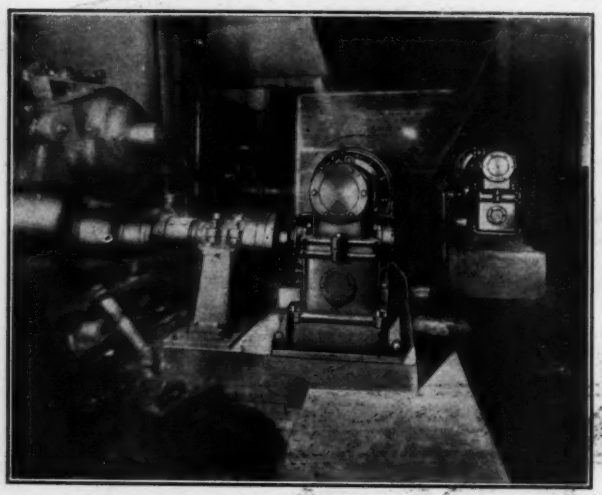
Worm Gear Drives in Paper Mills

Distinctly efficient drives employing worm gear speed reducers are also quite numerous, a number of which can well be mentioned to illustrate the really wide variety of applications for which this popular type has proved eminently satisfactory, both in connection with motor and steam turbine prime movers. One of the most noteworthy examples of such reducers in connection with a steam turbine paper machine drive is at the plant of the St. Regis Paper Company, where a 400 horsepower steam turbine furnishes the power for one of the paper machines.

The steam turbine revolves at a speed of 3,280 r.p.m., is direct connected to the main line shaft, at about its center point, through the worm gear speed reducer, the arrangement being made possible by the fact that these speed reducers are distinguished by having their high speed worm and their low speed gear shafts at right angles. The assemblage is extremely compact and the excellence of the speed regulation is very marked.

This particular installation is at the Defereit plant and other worm gear speed reducers are employed in the Trenton and Watertown plants of the company. In these latter mills, the units are of smaller capacity, being used in connection with repulpers, pebble mills, feed rolls, etc.

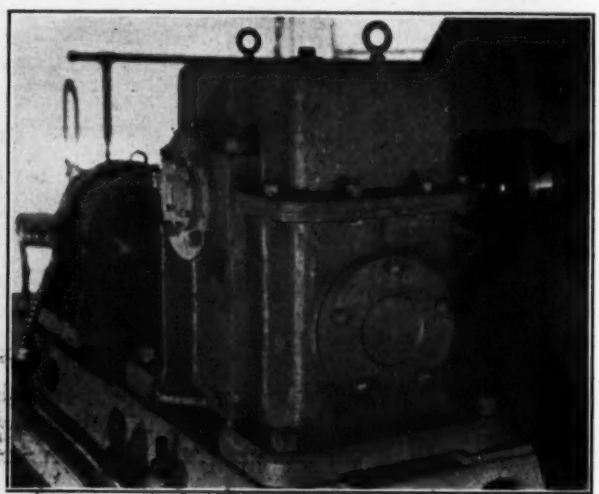
Worm gear speed reducer drives quite similar in principle to



Courtesy: Foote Bros. Gear & Machine Co.

FIG. 9

Worm gear speed reducer and magnetic friction clutch in sectional paper machine drive, Nekoosa-Edwards Paper Co., Inc.



Courtesy: W. A. Jones Foundry & Machine Co.

FIG. 10

Heavy duty worm gear speed reducer driving elevator at West Virginia Pulp & Paper Co.

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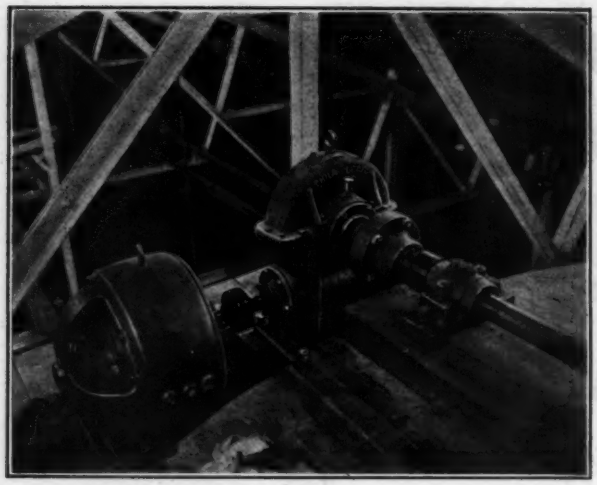


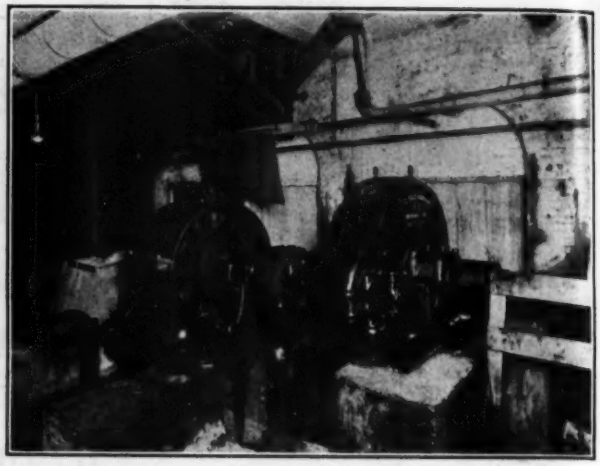
Courtesy: Philadelphia Gear Works.

FIG. 11

Typical worm gear speed reducer pulp agitator drive (speed ratio, 35 to 1), New York & Pennsylvania Co., Inc.

the standard paper drive assemblies first mentioned are in use at the Watervliet Paper Company to control eight sections of a line shaft driven paper machine. The reducer units drive the couch; first, second and third press; first and second dryer; and first and second calender sections. A general view of this sectional drive arrangement of paper machine is illustrated, together with a close-up of the unit driving the third press section, from which the compactness of the arrangement is quite apparent.

At the Bakelite Corporation, both at Perth Amboy and Bloomfield, worm gear speed reducers are in service on machinery used in the production of panelboards. At Perth Amboy, the speed reducers are used in connection with rotary blenders driven by 5 horsepower, 1,200 r.p.m. motors, the speed ratio being 25 to 1. Smaller units are employed in the drives of vertical agitators, in which the speed ratio is 7¼ to 1, with a motor speed of 1,800 r.p.m. At the Bloomfield plant, a special type of Fourdrinier equipped with a vacuum dryer is served by seven of these worm gear speed reducers. The seven worm gear speed reducers are used to drive the various sections, all of which are driven in turn from a main line shaft. The speed ratio of the line shaft reducer is 6 1/5 to 1, with a worm speed of 410 r.p.m., and transmits about 14 horsepower. The sectional drive reducers, transmitting



Courtesy. The Falk Corp.

FIG. 12

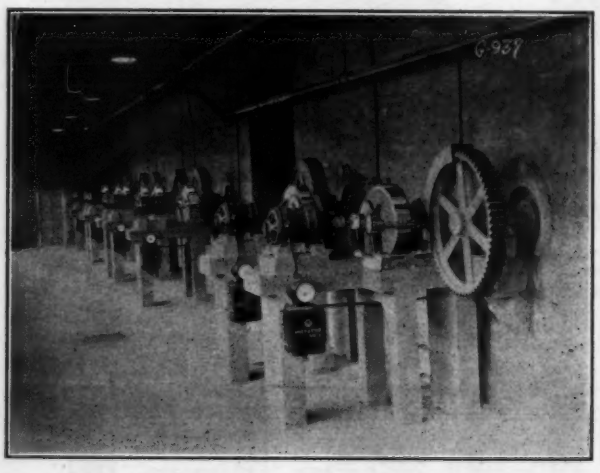
200 horsepower herringbone speed reducer in service twelve years continuously.

approximately 8 horsepower, also with a worm speed of 410 r.p.m., have ratios of 5 1/6 to 1.

The Champion Coated Paper Company also employs a number of these worm gear reducers for various machines, the specifications for which are:

Drive service	Speed ratio	Power rating
Squeeze roll, coating machine	14½ to 1	3 hp. at 1,700 r.p.m.
Brusg Eccen. shaft, coating machine	3⅓ to 1	2 hp. at 1,725 r.p.m.
Drum and apron drive, coating machine	19½ to 1	3 hp. at 850 r.p.m.
Agitator	35 to 1	1 hp. at 1,800 r.p.m.
Coater drive	19½ to 1	6 hp. at 600 r.p.m.
Counter drive to reel	3 5/9 to 1	2 hp. at 225 r.p.m.
Calender floor stand drive	4¼ to 1	6 hp. at 160 r.p.m.

A number of other worm gear speed reducer applications are listed in another table (Some Typical Worm Gear Speed Reducer Applications), typical installations which give some good idea of the adaptability of the device to various classes of drives. It is interesting, consequently, to compare the applications of worm gear speed reducer drives with the running description of the Kalamazoo plant of the Bryant Paper Company which was published in the issue of January 12, 1928, and featured in large part the use of spur gear speed reducers in a number of similar services. Incidentally, the Bryant plant also employs a number of worm gear speed reducers on couch, saveall agitators, saveall vacuum pumps and stock washers. A double reduction worm



Courtesy: The Falk Corp.

FIG. 13

Herringbone speed reducer driving agitators at the Hawley Pulp & Paper Co.

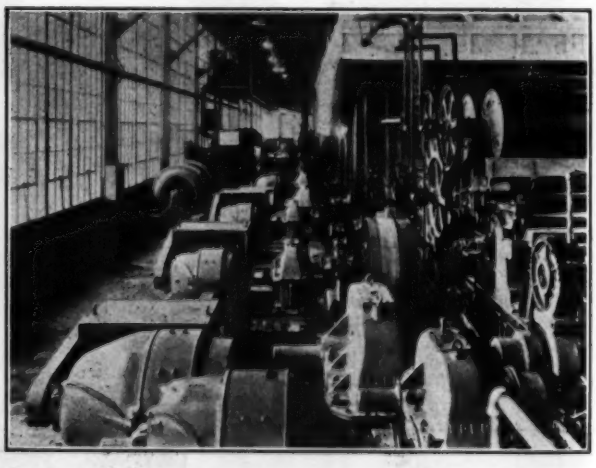


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FIG. 14

Sectional paper machine drive through herringbone speed reducers, Longview Fibre Co.

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gear, having a speed ratio of 113 to 1, is used on the saveall agitator, driven by a 5 horsepower, 1,160 r.p.m. motor. The vacuum pump is driven by a 15 horsepower motor at 1,160 r.p.m., speed ratio 4 5/6 to 1.

Herringbone (Mill Type) Speed Reducers

Another type of speed reducer which is very much to the fore at the present time is the smooth running and highly efficient mill type reducer with herringbone gears. These gears operate with very little noise and have exceptionally high overload capacities, 100 per cent for short periods. They are extremely long lived and demand no attention other than that for periodic lubrication once a year, or so.

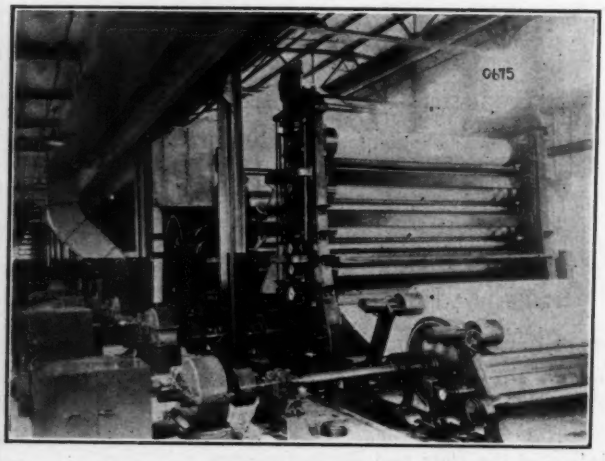
At the Watervliet Paper Company, to cite one particular example of cheap service rendered by this form of speed reducer, the three most important transmissions in the mills are effected by these units so successfully that it is claimed that not one of the three has given a minute's trouble since installation. They have been in continuous service, 24-hour, two for twelve years and the third for five years.

One of the twelve year units transmits 175 horsepower, either reducing the speed of a motor to that of an electric generator, a 6 to 1 ratio, or else from the speed of a waterwheel to that of the generator, depending upon whether there is a sufficient flow of water to drive the generator or whether the electric motor has to be pressed into service. The second of the twelve year old units is a 200 horspower reducer, ratio 4.4 to 1, which drives the main variable speed line shaft at from 50 to 250 r.p.m. from a direct current, variable speed motor. The newest of the three reducers, the five year old unit, is rated at 50 horsepower, gives a 3 to 1 reduction, and drives a 136-inch suction roll from the main shaft.

After ten years of continuous service, the 200-horsepower reducer was opened up and it was found that the gears showed absolutely no signs of wear. In fact, the tool marks on the gear teeth were still plainly visible and the gears looked as if they might have just been generated.

The gears are inherently highly efficient and it is estimated that they effect a saving of at least 20 per cent in power consumption, which with electric energy valued at the very low rate of 1 cent a kilowatt-hour means an annual saving in the cost of power alone of $4,590.00, or sufficient to wipe out the investment entailed in the purchase of the three speed reducers within a single year, a 100 per cent yield.

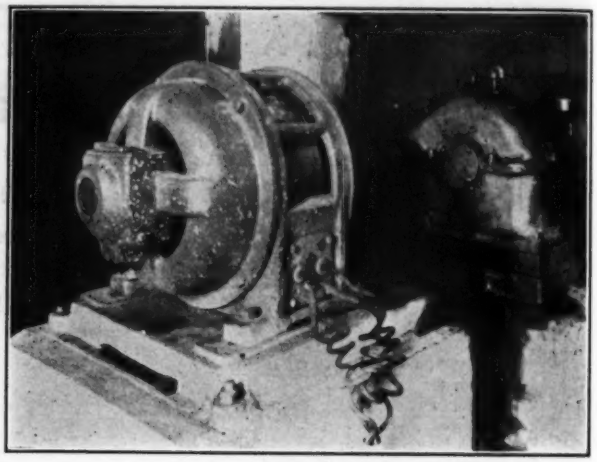
Prior to the installation of these efficient speed reducers, a double rope drive reduction was employed, the first reduction being from a steam engine to a jackshaft and the second from the jackshaft to the main machine shaft. This arrangement proved a costly one, for frequent production delays were caused by rope breakages which tied up the entire paper making process.



Courtesy: The Falk Corp.

FIG. 15

Herringbone speed reducers driving presses at the Everett Pulp & Paper Co.



Courtesy: Foote Bros. Gear & Machine Co.

FIG. 16

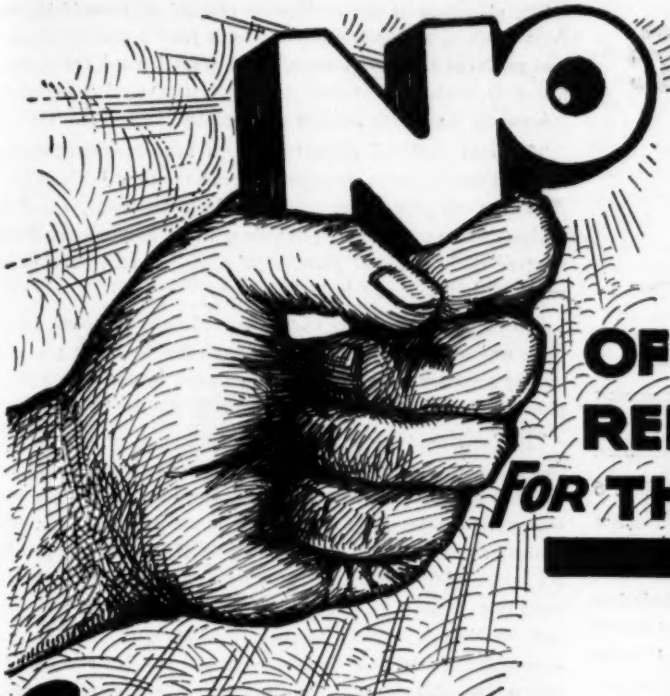
Stock chest drive at Robert Gair Co.

A modification of the standard type of herringbone (mill type) speed reducer, or rather a combination of such a unit with a roller chain drive, has also recently come on the market for which considerable merit is claimed. The herringbone gears have generated teeth with a 30-degree helical angle, insuring a generous overlap, and their shafts are mounted on anti-friction roller bearings, greatly simplifying the lubrication problem. The combination consists of a single stage of herringbone gear reduction with the chain drive from the low speed shaft of the gears to the driven machine. The construction eliminates the customary low speed shaft coupling and discounts to some extent the necessity for accurate drive alignment. With a smaller gear speed ratio than if the entire speed reduction was consummated within the geared stage, the reducer itself can be made considerably smaller and the roller chain drive operates well within its rated speeds and strengths. As a rule, this combination device is materially lower in first cost than a standard herringbone speed reducer of the same ratio and capacity.

The primary object of all modern speed reducers, those previously featured as well as the types discussed in this installment, is to transmit power efficiently and to step down the high speeds of electric motors, steam turbines, gas engines and other high velocity power units. A secondary object is the elimination of hazardous and troublesome open gearing, more cumbersome and space consuming transmissions of all kinds and to provide an efficient, compact transmission for makeshift means of reducing speeds and transmitting power. The attainment of these objects, realized to a marked degree by the various types of approved modern speed reducers, invariably effects substantial reductions in operating costs and the installation of such devices is becoming more and more recognized as an essential and profitable step in modernizing the mill and power plant.

New Open End Clipper Belt Cutter

The Clipper Belt Lacer Company, of Grand Rapids, Mich., announces that the new 10 inch open end clipper belt cutter is now ready for delivery. This new cutter will cut and square any make of belting up to and including ten inches in width with a slight pressure on the handle. It is built of high grade materials throughout and is designed for durability and efficiency of operation.



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NEWS PRINT FROM HARDWOODS

News print paper equal in quality to American standards has been made from New Zealand hardwoods by the United States Forest Products Laboratory of the Forest Service, United States Department of Agriculture, Madison, Wis., after a year of experimentation carried on for the New Zealand Forest Service, according to an announcement made by the New Zealand government.

The final test of the operation was the production of several tons of news print and rotogravure papers at two Wisconsin mills and the running of the news print paper over the presses of a daily newspaper.

The arrival at thinning age of 100,000 acres of fast-growing planted forests in New Zealand and the consequent desire to put the plantations on a sound production basis through profitable utilization of thinnings prompted the attempts to use two native species and four introduced species in the manufacture of news print and other papers. The United States Forest Products Laboratory undertook the investigation in the belief that results might be obtained which would be applicable to American species. This belief has been justified.

The development of a successful process for manufacturing news print from New Zealand hardwoods opens up possibilities in the use of American hardwoods (hitherto unused for this purpose) for news print production in this country.

The pulping trials in New Zealand woods began a year ago when Alexander R. Entrican, engineer in forest products representing the New Zealand Forest Service, arrived at the Forest Products Laboratory with two carloads of logs of the following species: Insignis (Monterey) pine, rimu (the dominant New Zealand softwood), tawa (a New Zealand hardwood unsuited to the production of lumber), European larch, Austrian pine, and Corsican pine. For the purposes of the pulping trials the two New Zealand woods and the insignis pine were considered most important.

The main objectives of the experiments were to produce a pulp or pulps suitable for news print from the available species and particularly rimu, tawa, and insignis pine, to produce a satisfactory kraft (dark-colored wrapping) pulp from the pines and larch, and to produce bleached chemical pulps.

The objectives of the study were realized in a gratifying way. As a result of attempts to produce news print a satisfactory sheet was produced from mixtures of tawa ground wood (produced in a strictly mechanical manner on a pulpstone) and tawa sulphite (chemical) pulp with insignis pine sulphite.

The usual ratio of ground wood to sulphite pulp (normally added to news print to give strength) in news print is about 3 to 1. Reversing this practice the Forest Products Laboratory found that a highly satisfactory news print sheet could be produced from a mixture of 50 per cent tawa sulphite, 35 per cent tawa ground wood, and 15 per cent insignis sulphite.

Satisfactory kraft pulps were produced from the New Zealand pines and larch, and bleached pulps suitable for book paper and similar products were produced from tawa by the soda and sulphite processes and from insignis pine by the sulphite process.

The development of a satisfactory news print process for tawa and insignis pine—there are also indications that bleached rimu and European larch might be added or substituted—holds interesting possibilities for New Zealand in an economic way. New Zealand at present buys news print from Canada and England.

Conservatively weighted cost figures for the manufacture of news print from tawa and insignis pine indicate that a news print mill established in New Zealand could compete with Canadian pulp laid down in New Zealand ports and possibly could hold its own in any price-cutting competition that might arise. At present it is estimated that New Zealand could absorb the output of a mill producing 100 tons of pulp daily, with a tendency to increase the demand.

The production of news print from hardwoods is of great significance in the United States. With spruce, the "Old Reliable" of news print, and hemlock nearing depletion in this country, with finished news print, pulpwood, and pulp being imported in quantities, and with the prospect of increasing rather than decreasing prices, diversification of any sort should not be unwelcome to news print users.

STATISTICS ON PAPER

When the Federal Trade Commission after the World War discontinued its statistics for the paper industry the American Paper and Pulp Association at the suggestion of the PAPER TRADE JOURNAL took up this work in recognition of the need for an authoritative centralized source of statistical information regarding the paper industry of the United States.

The Association's affiliated associations and other organizations in the paper industry have extended their ready cooperation in the development of this statistical service which is now recognized as the only current statistical analysis covering all of the major grades of pulp and paper.

Major Porter, the Association's secretary, and J. A. C. Kavanagh, its statistician, are to be congratulated on the form in which their monthly statistical summaries are now being gotten out. Their processed report shows by graphs and tables the production, shipments, stocks and per cent of capacity operation, as well as the changes in production and inventory for all of the major grades of pulp and paper.

The evident willingness of mills in all grades of the industry to file their figures with the American Paper and Pulp Association, as well as the desire on the part of the other organizations in the

industry to cooperate with the Association in developing useful and dependable statistical data indicates the ability of the American Paper and Pulp Association to handle effectively the major common problems of the industry.

The PAPER TRADE JOURNAL congratulates the Association on the character, appearance and usefulness of its statistical service.

Has Over 900,000 Horsepower

The starting of the first generators in the Paugan, Quebec, hydro-electric plant of Gatineau Power Company, a subsidiary of International Paper Company, and the approaching completion of the Grand Falls, New Brunswick, and Kent's Falls, New York, hydro-electric developments, draw attention to the great quantity of power which International Paper Company has developed and under construction.

In the United States, Canada, and Newfoundland, International Paper Company and its subsidiaries now have 913,100 horsepower already developed and in process of construction nearing completion. An idea of the size of this power may be had from the fact that it is three and one-half times the developed capacity of the Muscle Shoals project and over 60 per cent greater than the developed power on the American side of Niagara Falls.

Of the 913,100 horsepower of the company, 436,000 horsepower—nearly one-half—is on the Gatineau River, in the Province of Quebec, in the hydro-electric plants of Gatineau Power Company. 126,600 horsepower is in the developments of Gatineau Power Company on the Ottawa River and its tributaries. The Grand Falls, New Brunswick, station of Saint John River Power Company will have 80,000 horsepower. International Power and Paper Company of Newfoundland, Limited, has a hydro-electric plant at Deer Lake generating 98,000 horsepower. In the United States, International Paper Company has hydro-electric plants on the Hudson, Saranac, and Connecticut Rivers of a combined capacity of 62,500 horsepower.

The aggregate of these hydro-electric developments is 803,100 horsepower, and the balance of the power of the company—110,000 horsepower—is in hydraulic power plants in its pulp and paper mills. None of these figures includes any of the extensive power developments of New England Power Association, in whose common stock International Paper Company has a very large interest.

Pacific Straw Paper Co. Busy

PORTLAND, Ore., July 27, 1928.—The Pacific Straw Paper and Board Company, of Longview, Wash., is now turning out 40 tons of finished product every day, and has been working twenty months on a 24-hour basis. Shipments of finished paper board for the first six months of this year totaled 170 carloads, according to A. H. Anderson, general agent for the Pacific Waste Paper Company, the assembling company for the Longview plant.

According to Mr. Anderson, the company last year paid $130,000 for waste paper assembled in Portland, and the waste paper company is now equipping a $25,000 plant at 15th and Pettygrove streets in Portland, with a similar plant under way in Seattle. The paper board and chip board manufactured by the mill is shipped in large quantities to the Orient. The Pacific Straw Paper and Board Company now represents an investment of $400,000.

Break Ground for Bag Mill at Carthage

CARTHAGE, N. Y., August 6, 1928.—Construction work was started this week on the new bag making unit which is to be added to the plant of the Champion Paper Company. Corwin T. Jewell, general manager, announced the breaking of ground for the new mill. Details of the new factory were outlined recently in PAPER TRADE JOURNAL. The contract will require three months to complete. By late fall it is expected that operations will be under way. The output will be kraft sacks.

Study of Forestry Taxation Launched

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, ORE., August 2, 1928.—Fred R. Fairchild, professor of economics at Yale University, has arrived in Portland, Ore., to spend several months in investigating the forestry tax situation. His visit is of vast importance to all departments of forestry industry, as his survey is expected to result in a fair and equitable basis for tax computation, although it is stated that he will make no report until the analysis is absolutely complete and accurate.

Mr. Fairchild has with him two expert assistants from his department at the university. He has taken offices with the Pacific Northwest forest experiment station at 514 Lewis building, Portland.

The study is made under authority of the Clark-McNary act, which became a law June 4, 1924.

"We have been nearly two years developing our plans for study," said Professor Fairchild, "and we are now well under way, making studies in each important forestry center. Oregon seems to be the key state for the Northwest survey.

"Dissatisfaction with the American property taxes as applied to forests, has had expression for more than a generation, during which time the volume and vigor of the complaints has grown. It does not appear to be merely a question of the amount of the taxes levied upon the forests, but rather methods of taxation adopted. It is not merely a question of resistance to the payment of taxes, but rather that taxation has the power to effect the business of forest growing and the future of forests in a peculiarly unfavorable manner."

This and similar enlightening explanations of Professor Fairchild's mission to the Northwest have been made in speeches before civic clubs, state officials and in newspaper interviews, as his opinions are being received with high respect.

"The complaint is made," said Professor Fairchild, "that taxes are levied at present in such a manner as to lead to the premature cutting of virgin stands of timber, and that they interfere seriously with programs of reforestation. The forest service, in attempting to encourage timbermen to reforest, is continually met with the reply that the taxes are so prohibitive as to make such procedure an unwise investment, due to the slow returns."

It is probable that branch offices of this investigating committee will be established in Salem, the capital of Oregon, and in Olympia, the Washington capital, in order that the legislative bodies may have close contacts. The colleges and universities of the two states are also to be invited to co-operate.

Professor Fairchild points out that his investigation is purely a fact-finding analysis, intended to give legislative bodies a foundation upon which to base any new measures which may be drafted to relieve the situation in the respective districts. One main point will be to compare forestry taxation with other forms.

Pusey & Jones Construction Program Under Way

In a previous issue of the PAPER TRADE JOURNAL it was announced that The Pusey & Jones Corporation had decided on its plans for modernizing the layout, buildings and equipment of their paper machine departments.

A recent visit to this veteran plant showed that the work of demolishing several obsolete buildings is now complete and that the structural steel on its new 50 x 100 feet forge shop is ready for the bricklayers. The new 110 x 220 joiner shop, which will be a two-story affair, is also beginning to acquire form, and the entire yard has taken on a more efficient shipshape appearance.

All new buildings are of exceptionally heavy construction and will be equipped with the latest development in material-handling equipment and tools.

These improvements, together with its acquisition of a large tract of land directly across the Christiana river will give The Pusey & Jones Corporation unusually fine facilities for quality production on a more economical basis.

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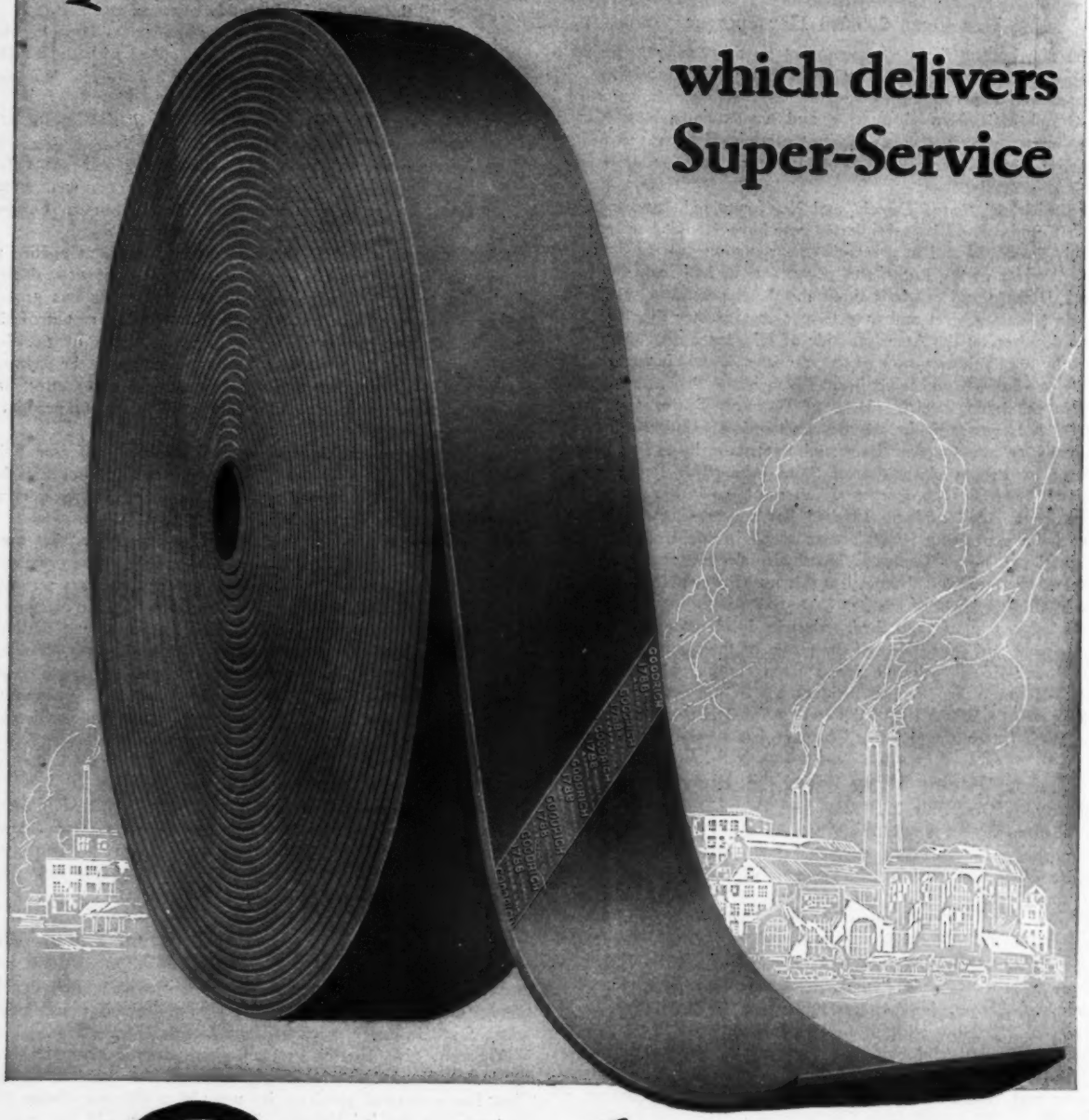

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Edited by
RONALD G. MACDONALD, Secretary

Sulphate Process Patent Review

By Joseph Rossman [1]

In the sulphate process the cooking liquor consists briefly of a solution of sodium sulfide and sodium hydroxide. The name "sulfate" process has its origin in the fact that sodium sulfate is used in producing sodium sulfide by reduction in the smelting operation which forms a part of the process in the preparation of the cooking liquor. The sulfate process is well summarized in a recent patent no. 1,279,604 as follows: First; the bark is removed from the wood which is to be pulped and this wood is cut into small pieces or chips. Sometimes it is dried before further treatment. The chips are fed into digesters. Secondly; the chips are cooked or digested in the digester of a solution of sodium compounds, the most prominent of these being sodium hydroxide ($NaOH$), sodium sulfide (Na_2S), sodium sulfite, sodium carbonate (Na_2CO_3) and sodium sulfate (Na_2SO_4) the first two of these compounds being the active agents. The heat and pressure may be supplied by the direct introduction of hot steam into the digester; but the same result is more indirectly effected by heating the liquor in a separate receptacle or heater and introducing it thus heated and under steam pressure into the digester or using mechanical means such as pumps to maintain a circulation of said liquor through the digester. Thirdly; the digester is emptied of its contents, by blowing or dumping, into the wash tanks, where the pulp is separated from the black liquor. Fourthly; this liquor is evaporated partly or wholly in heated evaporators. Fifthly; this liquor is incinerated in a rotary furnace and then burned in a blast furnace, from which sodium carbonate in a melted state runs out into a dissolving tank; or, if the black liquor be evaporated to about 30 deg. Be., it is blown by compressed air directly into the blast furnace, dispensing with the rotary furnace and using for speedy intensification of heat additional light fuel such as wood oil and gas. But if the liquor be sufficiently overheated before entering the furnace, there will be no need for this extra fuel, but the remaining water in the liquor will evaporate immediately. Sodium sulfate is added to the furnace to make up for lost alkali. Superfluous heat may be directed to a boiler behind the blast furnace or rotary furnace. Sixthly; if the solution in the dissolving tanks be sufficiently strong it may be causticized, the sludge separated by settling or filtering from the clear liquor and the latter is ready for use in the digesters. The liquor which is pumped from the alkali room for use in the digester is called white (strong) liquor. The first liquor drawn off from the digester after digesting is called strong black liquor, and as the black liquor grows weaker in the washing process, the part of it which is drawn off later is called weak black liquor. Besides such recovery of alkali and other materials by burning dissolving and subsequent treatment, some mills treat the relief gases exhausted from the digesters, and also the black liquor to obtain turpentine resin oil and other by-products for fuel and other uses.

The following abstracts of the United States patents give a survey of the patent literature on the sulfate process.

1. Eaton, 106,143. August 9th, 1870.

In the practice of the process, the straw, wood, or other fibrous substance out of which the pulp is to be made is put in the water-tank, and raised to the boiling point. For each ton of straw or wood, from two to five hundred pounds of lime is taken which is first made into a milk of lime. To this is added about twenty pounds of sulphur. The mixture is thrown into the tank of boiling water containing the straw or wood, leaving the combination of the sulphur and lime to take place in the tank, thus saving the preparation of the sulfide beforehand, and continuing the treatment as though a caustic soda were used. The result is a pulp in all respects equal, if not superior, to that made by the use of caustic soda or potash, and in even a more favorable condition for bleaching. The rationale of the process seems to be as follows: The sulfide formed in the solution first dissolves the resinous and incrusting matter of the straw or wood, which it immediately gives up to the excess of lime, the sulfide being thus left in its original condition to act again and again.

2. Eaton, 119,224. September 26th, 1871.

In the treatment of wood, straw, or other similar substances for the production of paper-pulp a solvent is required that will remove the silicious, resinous, and other incrusting materials that are associated with the cellulose or ultimate vegetable fiber sought for. The invention consists in the use of a solution of the sulfide of sodium as a solvent for the purpose of separating the incrusting material from the ultimate fiber, as above specified, in place of the solvents now used in the manufacture of paper-pulp. This solvent acts very rapidly and efficiently, and may be used either in open vessels at low temperatures or in closed vessels under pressure and high heat. The sulfide of sodium is produced by heating a mixture of about seventy one parts of the anhydrous sulfate of soda with twenty-four parts of pulverized charcoal, coke, or other form of carbon to redness in a crucible, retort, or other suitable receptacle, and maintaining the heat so long as any carbonic oxide is evolved; after which the ignited mass is removed and thrown into water. The resulting solution of sulfide of sodium is made of

[1] Patent Attorney, Washington, D. C.

the strength of about 3° Baume, and is applied to the wood, straw, or other vegetable substances in precisely the same manner as caustic soda and other solvents are used. Sawdust or any other finely-divided vegetable substance may be used instead of charcoal or coke in the preparation of the sulfide of sodium, proportioning the materjal used to the percentage of carbon contained therein.

3. Dahl 296,935. April 15th, 1884.

The invention consists in a process for the manufacture of cellulose from wood and other vegetable substances. For the purpose of dissolving the cellular mass or fibrous mass out of the bodies incrusting the same, the comminuted wood, straw, esparto, and the like are boiled under pressure in wrought iron vessels free from lead lining, containing a hydrated solution in which are contained sodium salts, partly in the form of sulfate of soda, carbonate of soda, soda hydrate, and sulfite of sodium. One hundred kilograms (about two hundred and twenty pounds avoirdupois) of half-dried pine wood require about twenty-six kilograms of the above-named salts in solution; straw or alfa, (esparto) about ten to twelve kilograms. Pine or fir wood requires five to ten atmospheres overpressure, the strength of the sodium solution being 6° to 14° Baume, the time of boiling thirty to four hours. Straw or alfa (esparto) requires two to five atmospheres overpressure, the strength of the sodium solution being 5 deg. to 8 deg. Baume and duration of boiling eight to three hours. By the boiling process the incrustations combine with the sodium solutions; the cellular matter remains uninjured in a loose consistency. After the boiling is completed, the brownish black lye is blown off into iron basins for the purpose of afterward recovering the sodium salts. The remaining cell matter is washed with warm water in the boiler or other suitable receptacle, and is then manufactured into paper-pulp, in the well known way, by means of a hollander or pulp engine, and bleached with a solution of chloride of lime. The color of the unbleached mass is yellowish gray; that of the bleached mass pure white or slightly but a clear yellowish, according to the degree of bleaching. Sulfate of soda serves for the production of the sodium solution. The sulfate dissolved in water is boiled with about twenty to thirty percent of burnt lime; but it receives its proper composition by the addition of the salts regained from the sulfate solution after the boiling process. The lye, after being used, is forced into an evaporating oven for the purpose of regaining the salts, is strongly calcined, and after thus being deprived of gas is drawn from the oven as a cake like mass, washed and the resultant solution used for the preparation of fresh lye. For obtaining pure salts without the admixture of carbon, the thickened lye is drawn from the evaporating oven and is fused in a calcining-oven at a dark red heat. The fused mass, after cooling, assumes a reddish brown color, is readily soluble in water, and has approximately the following composition: sixteen per cent sulphate of soda, fifty per cent carbonate of soda, twenty per cent sodium sulfide, four per cent diverse non-essential matters. This composition is very variable, according to the properties of the boiled matter, but without influencing the dissolving power of the solution afterward prepared therefrom. The salt which is regained should be dissolved as soon as possible or guarded against the influence of atmospheric air. By the process of boiling and regaining, about ten to fifteen per cent. of the salt in the solution is lost. In general practice the losses are replaced in the preparation of the lye of sulfate of soda. For the solution are taken eighty-five to ninety per cent of regained salt and fifteen to ten per cent of sulfate, which mixture, boiled with twenty to twenty-three per cent of burnt lime, yields the proper lye. With ten per cent. of loss a clear watery solution is taken for the lye, in which are contained ninety kilograms of regained salt; ten kilograms of sulfate are added and the solution in which are contained one hundred kilograms (about two hundred and twenty pounds) of salts in the already named proportion is boiled with twenty kilograms of burnt lime. If the loss amounts to fifteen per cent, then fifteen kilograms of sulfate are added to eighty-five kilograms of regained salt, the whole being boiled with twenty-three kilograms of lime. In the case of twenty per cent. loss, eighty kilograms of regained salts and twenty kilograms of sulphate are taken for the solution, and are boiled together with twenty-five kilograms of lime. If twenty-five per cent of sulfate is to be added, seventy-five kilograms of regained salts, twenty-five kilograms of sulfate, and twenty-eight kilograms of burnt lime are taken for the solution. In regular operation the uttermost limit of sulfate addition should be thirty per cent, seventy kilograms of regained salts, thirty kilograms of sulfate, and thirty-two kilograms of burnt lime. The proportion of salts contained in the boiling solution is, on an average, thirty-seven per cent. sulfate of soda, eight per cent. carbonate of soda, twenty-four per cent. soda hydrate, twenty-eight per cent. sodium sulfide, three per cent. diverse combinations. This composition is very varying according to the qualities of the materials to be boiled. The transfer from the soda-hydrate treatment to the described treatment with sulfate is accomplished in the preparation of the lye by replacing the losses of soda hydrate by the sulfate instead of by soda, and then with the disappearing of the hydrate gradually reducing the addition of lime during the boiling of the solution from forty-five per cent. to from about twenty to twenty-three per cent.

4. Drewson, 726,036. April 21, 1903.

The process of utilizing the waste liquors of sulfite and soda pulp mills, which consists in neutralizing the sulfite mill liquor containing salts of organic sulfonic acids with the liquor from the soda pulp mill containing sodium sulfide, concentrating the neutralized liquor, calcining the concentrated liquor, leaching the residuum obtained thereby, treating the solution thus obtained with burnt lime, and draining off the soluble sodium salts for further use.

5. Moore 1,130,317. March 2, 1915.

The process which consists in spraying lignin liquor resulting from the manufacture of sulfate pulp into a smelting chamber, smelting the inorganic content thereof for the formation of sodium carbonate, causing the smelted carbonate to flow in molten condition, continuously adding sodium sulfate to the flowing carbonate in the presence of a reducing agent, supplying heat for the reduction of the sulfate and the fusion of the sodium sulfide formed by such reaction, withdrawing the same in molten condition, and reclaiming the products of sublimation by passing them through the spray of lignin liquor.

6. Waite 1,212,158. Jan. 9, 1917.

The process of producing cellulose which consists in preparing a solution of caustic soda, adding thereto a small quantity of sulfur, with formation of sodium sulfide, and employing the liquor thus produced for the digestion of cellulose containing material, the quantity of sodium sulfide present being less than one-half of one per cent and being, therefore, insufficient to act as the digesting agent, but sufficient to prevent the free oxygen in the material from forming oxycellulose during the process of digestion.

7. Waite 1,249,287. Dec. 4th, 1917.

The process of digesting wood pulp for the manufacture of paper, which consists in adding to a caustic soda solution a quantity of sulfur sufficient to convert a portion of the caustic soda into sodium sulfide, and thereafter adding the liquor thus produced to the wood to be digested, drawing off the digested wood pulp the resulting liquor, evaporating the water therefrom, burning the organic matter, dissolving the remaining carbonate of soda and adding thereto lime and sulfur whereby there is produced a solution containing caustic soda and sodium sulfide and using the liquor thus produced for a succeeding process of digesting wood.

8. Stage 1,279,604. Sept. 24th, 1918.

The process consists in washing the pulp under digester pressure, emptying the digester when the pulp is mixed with water only, keeping the black liquor under digester pressure all through the process, leading the black liquor directly from the digester to the furnace where said liquor is burnt, transferring relief gases from the digester as fuel to the blast furnace without escape of inflammable material.

9. Moore 1,326,414. Dec. 30th, 1919.

The process of recovering waste products which consists in partially evaporating and concentrating black liquor, subjecting the same to heat and pressure while maintaining it under a pressure greater than its vapor pressure at that temperature to generate an explosive force therein and then liberating such black liquor in a furnace in finely disrupted particles, evaporating the liquid content and burning the combustible content thereof, and recovering the soda content.

10. Olsson 1,375,759. April 26th, 1921.

In the manufacture of sulfate pulp acting upon the black liquor obtained from a preceding operation in such a manner as to make a portion of the alkaline salts of sodium found therein available for conversion ultimately into sodium sulfide for the purpose of making sodium sulfide the predominant solvent in the cooking liquor for use in a subsequent operation.

11. Richter 1,427,125. August 29th, 1922.

The process which comprises digesting raw cellulosic material in a sulphurous acid solution of a soluble sulfate, removing the waste liquor from the resultant pulp, concentrating the waste liquor by evaporation, burning the combustible content of the evaporated liquor, smelting the inorganic content thereof in an oxdizing atmosphere, and recovering the soluble sulfate.

12. Richter 1,469,960. October 9th, 1923.

A process comprising concentrating the black liquor resulting from the digestion of wood in the manufacture of sulfate pulp and containing residual sodium carbonate, adding sulphur thereto, smelting the mixture, recovering the molten effluent containing sodium sulfide resulting from the reaction of sulphur with such sodium carbonate, and adding sodium carbonate in sufficient quantities to compensate for the loss thereof by the chemical reaction of sulphur with sodium carbonate initially in the spent liquor.

13. Nordstrom 1,471,276 October 16th, 1923

A method of filtering waste gases from soda furnaces of sulfate cellulose mills which consists in passing said gases and chips of wood through a filtering shaft so as to cause the hot gases to dry said chips of wood, which will in turn remove dusty and sublimating products from the gases, and then passing said chips of wood together with the products absorbed thereby to a sulfate cellulose boiler without first separating said products from said chips of wood.

14. Summers, 1,597,841. August 31st, 1926.

A process for producing bleached kraft pulp which consists first in digesting the vegetable material in a kraft liquor to which phosphoric acid or a salt thereof has been added and then subjecting the pulp to a bleaching operation.

15. Beveridge 1,631,789. June 7th, 1927.

The method of treating woods and other fibrous substances for the production of pulp which comprises the pre-treatment of the said woods or other fibrous substances with the waste liquors obtained from the treatment of woods and other fibrous substances in aqueous solutions of sodium acid sulfite, and thereafter completing the conversion of the pre-treated woods or other fibrous substances into pulp with aqueous solutions containing varying amounts of sodium hydrate and sodium sulfide.

16. Wood 1,634,603. July 5th, 1927.

Process of making paper from straw and similar fibrous vegetable materials, which comprises incorporating a solution of the alkali soluble components of the fibrous material obtained by digesting the fibrous material with an alkaline reagent comprising a soluble sulfide with a pulp derived from said material and neutralizing the resulting pulp.

17. Collins 1,648,111 Nov. 8th, 1927

A method of treating sulfate and soda pulp, which consists in blowing the cooked charge of pulp and liquor from a digester, extracting the major portion of the liquor from the pulp by drainage, without dilution, segregating the undiluted liquor, passing the partially drained pulp over a screening device and washing the remaining liquor from the pulp, and then treating the diluted liquor from the pulp, and then treating the diluted liquor independently of the undiluted liquor, by evaporating the water under vacuum, by means of heat recovery from the cooking process.

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Power for Gulf States Paper Co.

United Engineers & Constructors, Inc., of Philadelphia, has been awarded a contract to design, construct and equip a power plant for the Gulf States Service Company at Tuscaloosa, Ala., Dwight P. Robinson, president of the construction company, has announced.

The plant will cost approximately $1,000,000, will be located on Black Warrior River, and will supply the process steam and electric power requirements of the Gulf States Paper Company. The design calls for one 7,500 kw. steam turbine and three 1,000 hp. boilers. The boilers will burn pulverized coal.

Powell River Hog Fuel and Oil Burning Plant

By P. Sandwell [1]

There has been completed recently at the news print plant of the Powell River Company, Limited, Powell River, B. C., a steam plant embodying a number of late features. At this plant all necessary power is generated hydro-electrically and the steam plant is installed to supply steam for purely process purposes, such as for digester use and drying, although there are installed two steam turbine-generators having an aggregate capacity of 2,000 kw., for use in emergencies or in case of a prolonged drought. The paper mills have a daily capacity of 475 tons, and the total production of the steam plant averages about five million pounds a day of 24 hours.

Construction of the new steam plant was begun in 1923, when it became necessary to retire some of the return-tubular boilers installed when the mill was originally built in 1913. At the time of remodeling, the paper mill had a capacity of about 250 tons a day, but it was expected that an extension would be made shortly and the steam plant therefore was designed so as to be expanded easily to meet later requirements. The plant now houses six batteries, each consisting of two 4,900-sq.ft. water-tube boilers, and can be extended to accommodate two more batteries of similar dimensions, while there is room in the present building for the installation of a 5,600-sq.ft. boiler now in operation in the old plant.

Preparation of wood for conversion to paper results in the production of a certain amount of wood waste suitable for fuel. The total quantity produced, however, is sufficient only to provide some 30 per cent of the process steam required and the remainder, in this plant, always has been made up by the use of oil fuel. When the new plant was planned, consideration was given to the use of alternative fuels, but the fact that the plant already was equipped with storage facilities and can be reached by the largest tankers, so that the importation of oil is simple, influenced the decision to continue to use this fuel. Provision was made, however, so that in case of changes in fuel values the plant could, without unreasonable expense be converted for the use of coal, either with mechanical stokers or in the pulverized form. Further, in the design of the equipment for handling hog fuel from the sawmill to the boiler house, provision was made for the importation of this fuel should it later be found desirable.

The boiler house itself is a steel-framed building with concrete basement and firing floor, concrete walls and steep pitched corrugated iron roof. The boilers are mounted in pairs and each boiler is equipped with a Dutch oven for the consumption of wood fuel and with oil burners. In operation every endeavor is made to keep individual boilers operating continuously on wood or on oil, but on occasion the wood fuel is of such poor quality that some oil has to be added to assist combustion. So long as the mixture of fuel can be avoided, the keeping of records of individual boiler performance is comparatively easy, and in this way plant operation can be kept up to the mark.

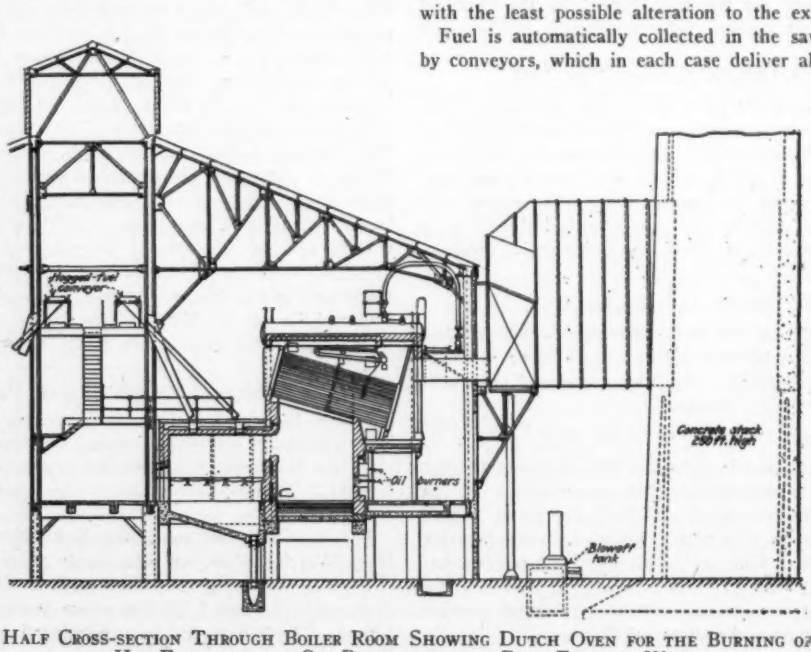
Each boiler is equipped with a steam-flow meter and CO_2 and flue-gas temperature recorders. The flue-gas temperatures are recorded on the flow-meter charts. As a further check on boiler steam production, totalizing meters are installed, one on the east side and one on the west side of the plant, each totalizing the production of six boilers, and in addition a Venturi recording meter is used for the measurement of feed water to the boilers.

All oil burners are of the mechanical atomizing type, three burners being fitted to each boiler in the rear wall of the combustion chamber. Oil is handled at an average pressure of about 200 pounds and at a temperature of about 175 degrees F. The side and center walls and the floors of the oil burning furnaces, which also constitute the combustion chambers when burning hog fuel, are air cooled and act as air preheaters.

Dutch ovens of both flat-grate and inclined-grate types were installed. All ovens are equipped with suspended arches, and the firing deck above the ovens is of pre-cast concrete blocks. These blocks have been found much easier to work on than the more usual checkered plate steel deck, being cooler and providing a better grip for the firemen's feet. All the Dutch ovens are fed by chutes from overhead conveyors and are equipped with hoppered ashpits, from which the ashes are sluiced into a flume carrying them into the mill-waste flume.

The plant is equipped with two concrete stacks 250 feet tall by 14 feet inside diameter, connections to which are made by means of steel breechings suspended on the outside of the boiler house walls. Stack arrangements are so made that, should it be found desirable later on to use economizers, the installation can be made with the least possible alteration to the existing system.

Fuel is automatically collected in the sawmill and barker mill by conveyors, which in each case deliver all the coarser material to hogs for reduction to hog fuel size. The fuel is then carried by a system of outside conveyors to the boiler feed conveyors, which are so arranged that the boilers are fed from the upper run, any surplus fuel being carried back on the lower run and delivered to the storage conveyor, which distributes the surplus fuel to the storage piles. Beneath the storage piles are arranged belt conveyors that reclaim the fuel as required and deliver it to an elevator that in turn transfers it to the upper flight of the boiler feed



Half Cross-section Through Boiler Room Showing Dutch Oven for the Burning of Hog Fuel and the Oil Burners in the Rear Furnace Wall.

* Power.

[1] Powell River Company, Ltd., Powell River, B. C.

conveyor. In this way a constant supply of fuel can be maintained, the storage pile being used to supply any deficiencies or absorb any surplus of fuel as delivered from the sawmill. All the conveyors are of ample capacity to deal with total steam plant requirements should it later be decided to import hog fuel.

The Powell River Company is fortunate in having available a supply of boiler feed water of exceptional purity, and no apparatus for purifying feed water has been found necessary. About 70 per cent of the total water evaporated is available for re-use and the layout is such that the rest is introduced through a feed-water heater located in the sawmill and using the heat available from the steam exhausted by the band mill and edger feed engines and log deck machinery. This water is delivered to a hotwell in the machine-room basement, which receives the condensate from the two paper machines located in this building as well as from all the heating coils and other necessary steam-using appliances.

In the old part of the plant there is a hotwell arranged for the collection of condensate from the four smaller paper machines, and water from both of these wells is pumped back to a feed-water heater located in the boiler house. Under normal operating conditions feed water is pumped from the heater by an electrically driven three-stage centrifugal pump having a capacity of 625 imperial gallons (750 U. S. gallons) per minute at 415-foot head. As a stand-by, there is installed a steam-turbine-driven centrifugal pump of the same capacity. When this turbine is operating, the exhaust is condensed in the feed-water heater. Each of these pumps is equipped with a pump governor actuated by boiler steam pressure in such a way as to maintain a constant predetermined excess of water pressure over steam pressure. In addition, each boiler is equipped with an individual feed-water regulator.

The design and construction of the complete plant was carried out under the direction of the engineering department of the Powell River Company by Chas. C. Moore & Company, engineers, of San Francisco.

Review of Pulp Mill Waste Recovery Methods*

By J. B. Kershaw [1]

For the disposal of sulphite mill wastes no method of treatment has secured general adoption, and the production of ethyl alcohol by fermentation of this liquor has been abandoned in all countries except in Sweden, on account of its prohibitive cost. The production of corebinders, adhesives, turpentines, resins, and tanning extracts has not become general for various reasons, one being that the demand for some of these products is so small, and the supply of raw material so great, that a few plants are able to supply the whole market.

As regards the present methods in use for dealing with the waste liquors of the sulphite process, it is correct to state, therefore, that in the majority of cases no attempts are made to recover the more valuable organic contents; and any treatment for their removal is done to obtain an effluent which can be turned into rivers and streams without danger to fish life. In the more up-to-date mills the liquor is passed through screens or "save-alls" in order to remove the finer particles of cellulose, and it is then treated with milk of lime and a solution of ferric chloride. A precipitate of flocculent ferric hydrate is thus produced, and on settling carries down all the suspended matter, and also a large proportion of the coloring matters extracted from the wood. The clear liquors from the acid sulphite process, after this treatment, are usually passed over a cascade, in order to remove any mechanically-held sulphur dioxide, before their discharge into drains or water-courses.

A relatively large loss occurs during incineration in the recovery of soda from the "black liquors" in the form of dust carried up the chimney; and the amount of fresh soda required in order to maintain the strength of the liquors varies from 150 lb. to 400 lb. per ton of pulp. Experiments are now being carried out in America with a new type of incinerator which will avoid this loss, and will also permit the utilization of the carbon contained in this waste as a fuel. Developments have also taken place relating to the evaporation of sulphite waste liquor and the combustion of the concentrated sludge under the boilers. A new type of evaporator has been in successful operation for this purpose for some time, and the residue obtained is stated to have a fuel value of 8,000 B.t.u. per lb., which covers the cost of installation and operation. It is stated this plant can be installed for a capital outlay of $1,250 per ton of pulp per day, and that a plant of this size will deal not only with the main liquors from the digesters, but also with the wash-waters from the blow-pits.

Nordstrom [2] has described a method of recovering heat and other valuable materials from the waste gases of the sulphite cellulose boilers, in which the raw cellulosic material which is to be submitted later to the sulphite treatment is charged into a filtering shaft in the form of chips and shavings. The material is partially dried by the hot gases coming from the boiler, and also serves as a filter to remove the dust and other solid matter carried away by the gases. The material in the shaft is then passed on to the boilers, and in this way both the heat of the waste gases and the absorbed products are turned to useful account.

Hanglighter and Schneider, two Canadian engineers,[3] have also patented a method of recovering sulphurous acid and heat from the waste gases of sulphite cellulose boilers. This process depends upon suddenly reducing the pressure by withdrawal of part of the gas from the boiler, and leading it into a special storage vessel. The remainder of the gas is then withdrawn through another main where it meets fresh lye passing to the storage vessel or container. The heat absorption occurs on the counter-current principle. Hanglighter and Clemm,[4] in a later Canadian patent, describe a modification of this method, which depends upon the introduction of the waste gases without any cooling into the fresh lye, the action taking place under pressure in a closed tank.

Improvements in Concentrating Waste Liquors

According to Bradley and McKeefe,[5] a method of concentrating black liquor depends upon spraying it into a heated atmosphere containing carbonic acid and sulphurous acid gases. The organic matter is precipitated and a solution of sodium carbonate or sodium sulphite is obtained. In a later patent they describe another method of treatment, which depends upon the use of an ammonium compound, the acid radical of which will form a sodium salt. The organic matter contained in the black liquor is precipitated by lime, and the ammonia, which is set free by this treatment, is driven off by heat. After separating the precipitated organic matter, either by decantation or filtration, the liquor is causticized and again employed in the mill. In yet another modification of the process, niter cake is used to provide the acid radical.

Brunler [6] has described recently the application of his submerged flame system of heating to the evaporation of the waste liquors from the sulphite process of pulp manufacture. The ordinary submerged flame apparatus is employed to evaporate the water, and a liquid is produced of the consistency of pitch which can be easily gasified in an ordinary producer plant. Details are given by Brunler of a trial with a sulphite liquor containing 90 per cent of water, which was reduced to less than 20 per cent by aid of the submerged flame. The fuel used for the burner was a lignite tar having a calorific value of 16,400 B.t.u. per lb., and 120 lb. of this tar was required per ton of liquor evaporated. The quantity of steam produced during concentration was 4,295 lb., and after deducting the power required for compression of the combustion air,

* Journal of the Society of Chemical Industry.
[1] Consulting Chemist, Oaklands, North Wales.
[2] U. S. Patent, Oct., 1921.
[3] Canadian Patent, June, 1923.

a surplus of 74 h.p. remained to the credit side of the account. The residue after the evaporation contained 20 per cent of water and possessed a calorific value of 7,270 B.t.u. per lb., and as one ton of the waste liquor yielded 265 lb. of this concentrate, a heat recovery of 1,926,500 B.t.u. was obtained per ton of sulphite liquor.

A method of evaporating sulphite waste liquors, due to H. A. E. Nilsson,[7] depends upon the use of the compressed vapors for heating purposes; and in order to reduce the corrosive effects of the acid gases in these vapors upon the metallic parts of the compressor, they are first treated with absorbents or adsorbents to remove the acids before compression.

R. H. McKee,[8] in a recent article, dealing more especially with the recovery of alcohol and other products from sulphite liquors, describes a method of evaporation which furnishes a satisfactory boiler fuel. He states that owing to the colloidal nature of the sulphite liquor, a thermo-compressor type of evaporator can be employed, for the boiling point does not change appreciably during the evaporation. In this form of apparatus there is only a small temperature difference between the two sides; and when operated with steam at 150 lb. pressure, and with a double-effect evaporator, it is possible to evaporate 5.4 lb. of water per lb. of steam employed. This form of apparatus is, in reality, a triple-effect evaporator, and by its use the amount of high-pressure steam required is only 0.185 lb. as compared with 0.276 lb. with a quadruple-effect apparatus. The steam at 150 lb. pressure, which can be produced per ton of pulp from the raw liquor by this apparatus, amounts to 7,450 lb., and 12,480 lb. of water must be evaporated to achieve this result. The steam can be used for the development of power in non-condensing steam engines, and the exhaust from these can be employed again to evaporate the sulphite liquor in multiple-effect evaporators. When expressed in terms of fuel value, the combustible material in the raw liquor is equivalent to 780 lb. of coal, testing 14,000 B.t.u., and in the fermented liquor to 610 lb. per ton of pulp.

J. E. Plumstead[9] has patented a method of treating the black liquor by passing it through heat zones of varying intensity in order to effect its evaporation and to produce black ash. The evaporation is so conducted that the material attains its maximum temperature before the evaporation is completed, and in this way any risk of fusion of the ash is avoided.

In a recent American patent, A. H. White[10] describes a method of regenerating the liquor obtained from the sulphate process of pulp manufacture. This is first subjected to destructive distillation, and the residual salts are heated with lime and carbonaceous material in order to reduce the sodium sulphate. The temperature required is between 600 degrees and 700 degrees C., and the product is finally lixiviated in order to recover sodium hydrate.

L. J. B. A. Colas and others,[11] in a patented improvement of the process for the recovery of alkali from black liquor, use calcium acetate as a flocculation catalyst to cause the separation of colloidal particles. The separated material is then treated with a solvent to remove fatty or resinous substances, and the residue is hydrolyzed and fermented in order to obtain ethyl alcohol. Oxalic acid may be employed as flocculation catalyst, and is recovered before the succeeding treatment with lime.

L. Bradley and E. P. McKeefe[12] in a Canadian patent protect the use of a precipitated basic aluminium compound for the treatment of black liquor from paper-pulp mills. This aluminium compound is first added to the liquor, and carbon dioxide is passed through it in order to throw down a precipitate of alumina in intimate mixture with the organic matter. The precipitate, on destructive distillation, yields a mixture of carbon and alumina, whilst the liquor, after removal of the organic matter, is concentrated and causticized in the usual way. The same two chemists in an earlier Canadian patent[13] describe a method of concentrating waste liquors by spraying them into hot gases containing carbonic acid, such as the waste gases from furnaces.

It is stated by E. D. Rinman[14] that the dry distillation of the residue from waste liquors should be carried first up to the temperature of 400 degrees C. in order to obtain the separation of the more valuable organic products, such as acetone, the alcohols, and ketones. The solid material which remains in the retort is cooled by a water spray down to 250 degrees C., crushed and granulated, and then heated in a rotary furnace up to 750 degrees, in order to causticize the lime. An alternative plan is to burn the residue as a powdered fuel with air, preheated to 1,000 or 1,200 degrees C., and when the gases produced by this combustion are quite free from sulphur, they may be employed for preheating the lime sludge, obtained during the production of sodium hydrate from the residue. The calcium carbonate obtained in this way can then be burned, in order to recover the lime.

The latest process for the treatment of black liquors, due to C. L. Wagner, is being exploited by the Ross Engineering Corporation of New York. The process is now undergoing trial at a kraft paper pulp mill at Muskegon, in Michigan, and the following particulars are taken from an article by F. E. Coombs.[15] The new method is based upon the atomization of the liquor, and its evaporation and combustion in this state in a preheated furnace; one portion of the heat produced by the combustion is employed to concentrate the liquor in another apparatus. The method was first tried with the waste liquor from a soda mill, and later with the more difficult sulphate-mill liquor. These experimental tests showed that the heat liberated by atomization and combustion was considerably in excess of that required to concentrate the liquors from 1.067 sp. gr. up to 1.332 sp. gr. in multiple effect evaporators. These preliminary tests also proved that it was possible by this method to raise a large amount of steam which could be applied to other purposes, and at the same time to supply 500 gallons of the liquor per hour for the combustion furnace.

The unit of plant erected at Muskegon consists of a circular vertical combustion furnace provided with means for heating it to the ignition temperature of the concentrated liquor. This is sprayed into it by a number of atomizing nozzles, arranged in the upper portion of the front wall of the furnace. These nozzles direct the spray downwards to the center of the furnace, and a supply of heated air is forced into the furnace from below, in order to support the combustion of the concentrated liquor. A large dust chamber is interposed between the furnace and the 500 h.p. vertical water tube boiler in which the steam is generated. A powerful induced-draught fan is necessary to give complete control of the draught through the boiler and furnace; and a mechanically-operated gas scrubber and an air compressor are also required. A removable oil nozzle for heating up the furnace when first starting is also required; and it may be necessary to assist the combustion with sawdust or wood waste, in order to complete the reduction of the sodium sulphate to sodium sulphide within the furnace. Generally, however, it has been found possible to reduce an addition of 1 lb. of sulphate to the corresponding sulphide, per gallon of the concentrate, without the addition of sawdust or other wood waste; but to ensure this reduction it is necessary to maintain a mass of incandescent carbon on the floor of the furnace, at a temperature of 1,500 degrees F. This temperature should not be exceeded, since otherwise there will be a considerable loss of sodium salts by volatilization. A dust chamber of ample dimensions in any case is needed between the furnace and the boiler, for the collection and retention of any soda particles that may be carried over by the draught.

[7] Canadian Patent, July, 1923.
[8] Canadian Patent, Dec., 1923.
[9] Industrial Chemist, May, 1927.
[10] Swedish Patent 58,778, May, 1925.
[11] Paper, 1920.
[12] U. S. Patent 1,500,890, 1924.

[10] U. S. Patents 1,580,269 and 1,575,473, 1925.
[11] British Patents 218,288 and 200,482, 1923.
[12] Canadian Patent 245,851, 1925.
[13] Canadian Patent 236,531, 1923.
[14] British Patent 217,235, 1923.
[15] Chem. and Met. Eng., July, 1927.

Economy of Stabilized Low Pressure Steam in a Paper Mill*

By Donald Ross-Ross [1]

The steam problems of a mill making high-grade papers are not altogether similar to those confronted by a news print mill. Uniformity of product of the latter type of mill leads to more or less uniformity of steaming conditions. This statement is not intended to include conditions brought about by a pulp mill that might form part of the entire plant unit, but is solely confined to the paper-mill end.

Uniformity of steaming conditions does not exist to any extent in paper mills manufacturing high-grade papers, especially where the product is particularly diversified. The various grades and the various weights at which the grades may be run, require different amounts of steam for drying. The horsepower required to drive the paper machine varies with the speed of the machine, increasing with the higher speeds and decreasing with the lower.

To illustrate how diversified the steaming conditions of a paper machine may be, one must consider that it is often necessary to run a machine slowly on a sheet that may be fairly heavy and give a good tonnage for the day. In such a case the drying steam demand is high and the steam consumption of the engine is relatively low, possibly necessitating live-steam makeup for drying. Again, the sheet might be a light one, being run at a fairly high speed, but giving low tonnage per day. This means that the engine is using more steam and the paper machine less, or a state may thus exist where the exhaust from the engine is in excess of

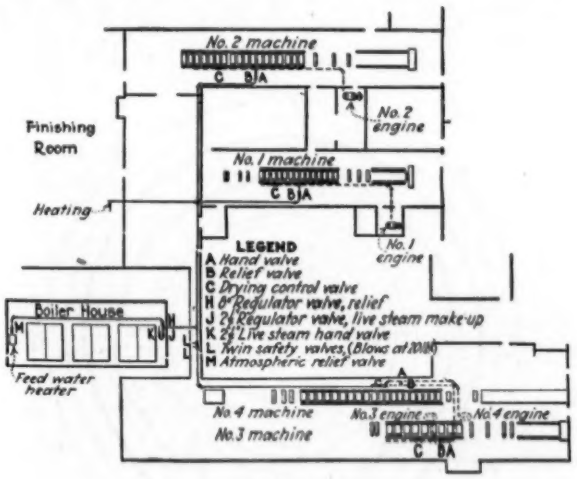


FIG. 1
Interconnected steam-header layout.

drying requirements. The result is likely to mean a loss to atmosphere of the surplus exhaust steam.

The operation of the drying control, alternately shutting off and admitting steam to the paper driers, throws steam to waste at times and puts a demand on live-steam makeup at other times. It is assumed that the exhaust from the engine is practically constant, and when the drying steam falls below the average value, steam is exhausted to the atmosphere, and when it rises above it there is a call for live-steam makeup.

There is also the loss of steam that occurs when the machine drying steam is shut off during washing up, changing of felts, breaks, etc., which should be considered.

The thought likely to occur to one at first, is to pipe all the exhaust waste steam back to the feed-water heater and thereby make a saving.

Even with a pulp mill being carried by the same boiler plant as the paper mill, the raw-water makeup is not sufficient to utilize all the steam which may at times be blown back to it.

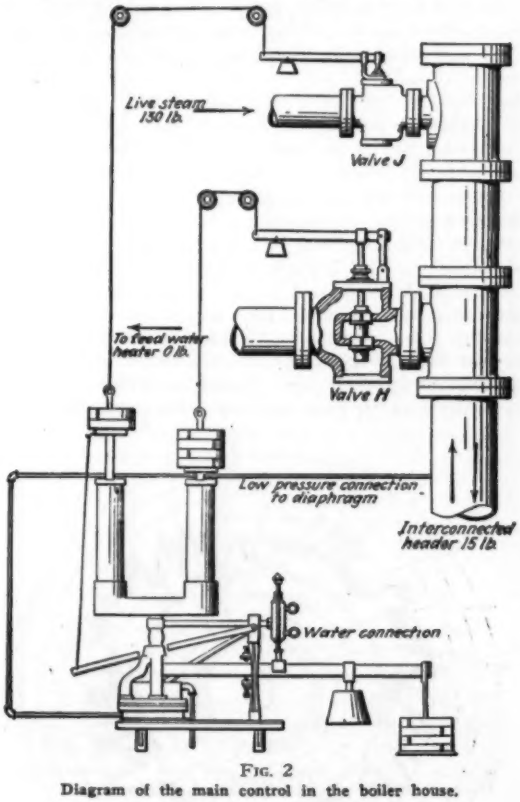


FIG. 2
Diagram of the main control in the boiler house.

The problem resolves down to putting the entire exhaust steam into such a form that it can be used not only for drying steam, but for such other low-pressure purposes as are required around the mill.

Engine Exhaust Joined Up to a Common Steam Line

In a specific instance, now to be considered, the first step was the joining up of all the engine exhausts to a common steel line which will be termed the interconnected steam header, Fig. 1. An 8-in. pipe line is used to join machines Nos. 1 and 2 to 3 and 4, with 6-in. branches to the engines exhausts of 2, 3 and 4, and a 5-in. to No. 1 engine exhaust.

Each connection has a hand valve and an outflowing weight-and-lever type relief valve. These connections were made on Sunday and no interference with production occurred. During the changes drying was done as in the past.

From the header is also run an 8-in. pipe line to the feed-water

* Power, June 26, 1928.
[1] Mechanical Engineer, Howard Smith Paper Mills, Cornwall, Ontario.

heater, but intercepted by an 8-in. balanced valve. A 2½-in. live-steam makeup line controlled by a balanced valve, joins ahead of this 8-in. valve. Both valves are operated by a double-motor hydraulic regulator, similar to what is used for controlling exhaust steam and live-steam makeup to paper machines. The apparatus is really intended to maintain a fixed pressure in a paper machine, first, by opening or closing the valve admitting exhaust steam by means of the lightly weighted plunger, and secondly, admitting live steam through a live-steam makeup valve operated by the second plunger should the exhaust be not sufficient to maintain the pressure.

However, this is not exactly the way the regulator works in the present case. The diaphragm connection is made to the header side of both valves, and an increase in pressure causes the plungers to rise, one after the other. The heavier weighted plunger is connected to the 8-in. valve so as to shut the valve when it is at the bottom of its stroke and leave it wide open at the top of its stroke. The makeup valve is connected conversely to this, and is closed with the second plunger at the top and open with the second plunger at the bottom of its stroke (Fig. 2.).

The result is that, when the beam of the regulator is properly weighted to a desired pressure of, say, 15 lb., the regulator will exhaust steam to the heater when the pressure rises a few ounces and will admit live steam when the pressure falls a few ounces from the average pressure.

This arrangement accomplishes three desirable results: First, the engines have a constant back pressure which improves their speed regulation. This, in itself, is an important feature. Secondly, steam that might be wasted by one machine is either used by another or goes to heat the feed water, and the net result is a smoother steam demand by the paper mill, as shown by the steam-flow charts, Fig. 3. Thirdly, the supply of drying steam being at a constant pressure, permits of better results by the steam controls on the paper machines. The drying charts (Figs. 4 and 5) illustrate this. This is also important where certain sheets are required to have a moisture content of a desired amount.

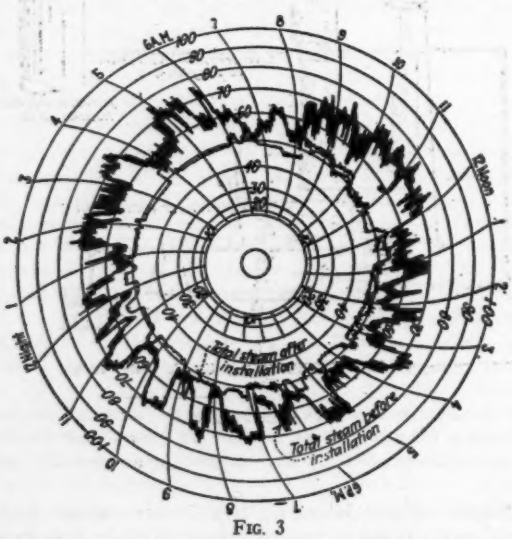


FIG. 3

Chart showing total steam before and after installation of interconnected header.

Original Hookup Method

Fig. 6 illustrates the method of hookup to each machine at the time of original installation and the alterations made as will be pointed out later.

The valve *A* is an ordinary stop valve placed between the main header and the engine exhaust to permit of repairs to the steam lines of the machine without closing down the whole system. Next to it, on the engine side, is a valve *B* of the weight-and-lever type, hooked open normally. This valve is arranged to open under pressure up to 20 lb. with no pressure in the header, or 5 lb. above the header pressure under normal conditions. The valve *B* is for two purposes.

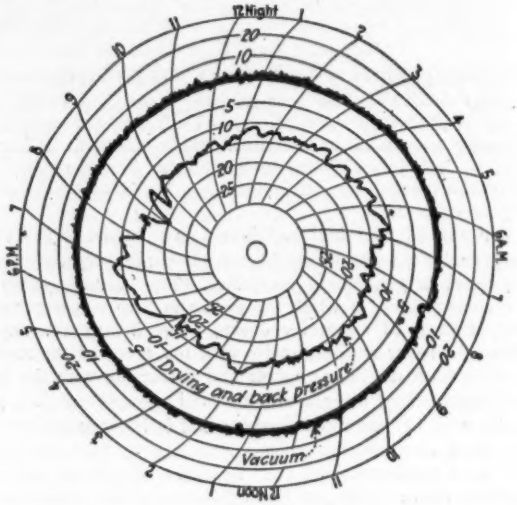


FIG. 4

Irregular pressure before installation of header.

Should the master controller in the boiler house go out of commission, it is only necessary to leave the 8-in. exhaust valve open and turn off the 2½-in. stop valve ahead of the live-steam makeup valve. This puts the interconnected header under atmospheric pressure and allows the excess steam from the machines to blow to the feed-water heater, or to the atmosphere.

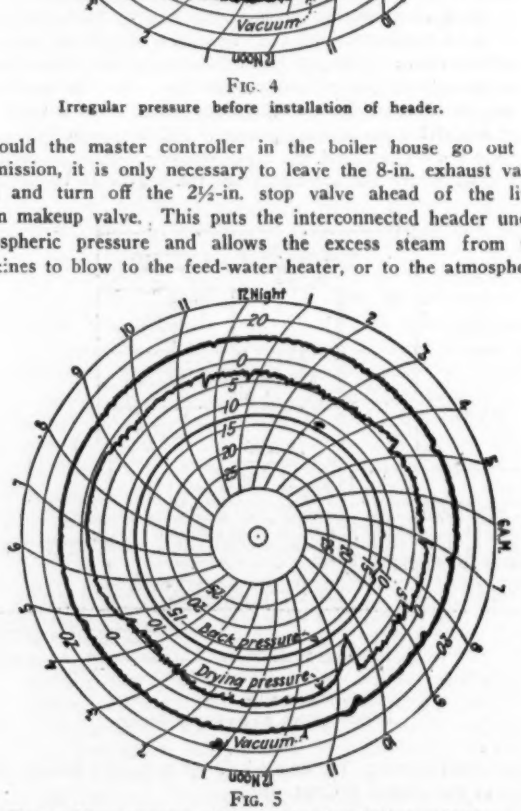


FIG. 5

More uniform pressure obtained after installation of header.

The machines are next cut off the header to maintain their own pressure by dropping valve *B*, which then acts only as a relief valve. Exhaust from the engine is connected by valve *C*, which would ordinarily control all the steam to the machines, and the live steam is added by valve *D* when necessary. *E* and *F* are hand valves to shut off the exhaust and live steam to the machines.

A word about the particular drying controls on the machines should be made before proceeding further.

A roll of small diameter extends across the machine near the

drier section in such a manner that it lies on the paper coming from the bottom drier to the top one, or vice versa. The paper is at an inclination to the vertical. The roll is held on levers at either side of the machine, one being made to operate a pilot valve of a regulator. When the sheet is wet, it lengthens out and the roll will sag down, partly shutting off the pilot valve and, hence, the supply of water going through it. To the piston rod is fixed a crossarm to which is attached on one side the rope (or chain) controlling valve *C*, and on the other side the rope controlling valve *D*. As the piston descends, it first opens valve *C* and then valve *D* (which operates if hand valve *F* is open). More steam is admitted, the pressure rises and the paper is dried.

If, on the other hand, the paper is inclined to be on the dry side, the piston is pushed upward by the greater flow of water allowed through the pilot valve. This movement closes off the valves.

Compensation to prevent hunting or overtravel is accomplished by a wire attached to the crossarm of the piston, which passes up over pulleys and down to a coil spring attached to one of the arms supporting the riding roller. As the piston goes down, the spring will pull up on the roll, which would be sagging owing to the damp paper. The more the piston goes down, the more tension will be put on the roller to raise it, until a state of equilibrium exists. When the paper is dry, the reverse takes place.

Under normal working conditions the live-steam valve *F* is kept closed and the relief valve *B* hooked open. When valve *C* has been opened up by the drying control, steam flows into the paper machine header through it and the exhaust steam from the engine is supplemented, if necessary, by steam from the header to maintain the pressure up to the valve. As valve *C* shuts off, the exhaust steam which does not pass through it is forced out into the header. The even back pressure maintained against the engine is illustrated by the chart, Fig. 5. Considerable difficulty in maintaining a constant speed, on one of the engines particularly, was found before the back pressure improved, as shown. Variation of speed was found to take place, synchronizing chiefly with the back pressure and to a lesser extent with the line pressure. The latter difficulty was overcome later by raising the boiler pressure to 200 lb. and reducing it to 130 lb. on the engine lines by a combination reducing valve. This arrangement allows of a 60 lb. fluctuation of boiler pressure without disturbing the pressure to the engines.

Saves 1,100 Lb. of Steam Per Ton of Paper

The results obtained through the changes made in the header layout are of interest. Provision was made at installation for a lead-off for low-pressure steam heating. This was connected, later on, to the finishing room and warehouse building, which, under normal winter conditions, requires an average of 2,400 lb. of steam an hour.

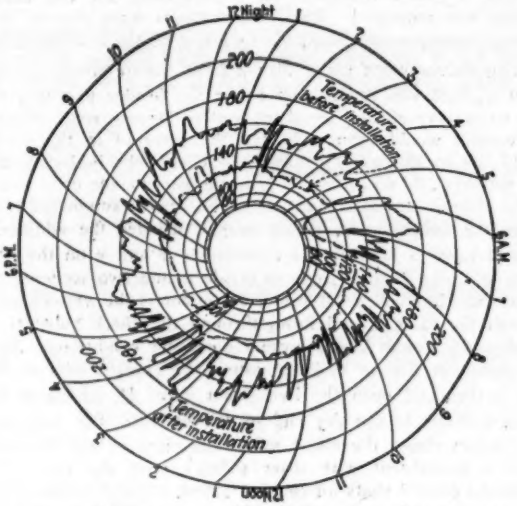


FIG. 7

Feed-water heater temperatures before and after installation.

Probably between 80 and 90 per cent of the time steam is relieved from the main header to the feed-water heater, and the rest of the time requires live-steam makeup through the 2½-in. regulating valve. This, of course, varies according to paper run and seasonal conditions. The steam consumptions of two particular days—one prior to cutting in the interconnected header and the other a month or so later—were 769,000 lb. and 589,000 lb. respectively. The productions on these days were 52.1 tons and 43.1 tons, or the steam per ton of paper made was 14,750 lb. and 13,650 lb.

Apart from this reduction excess steam was thrown back to the feed-water heater as shown by the temperature chart, Fig. 7.

The water fed to the boilers on these two days amounted

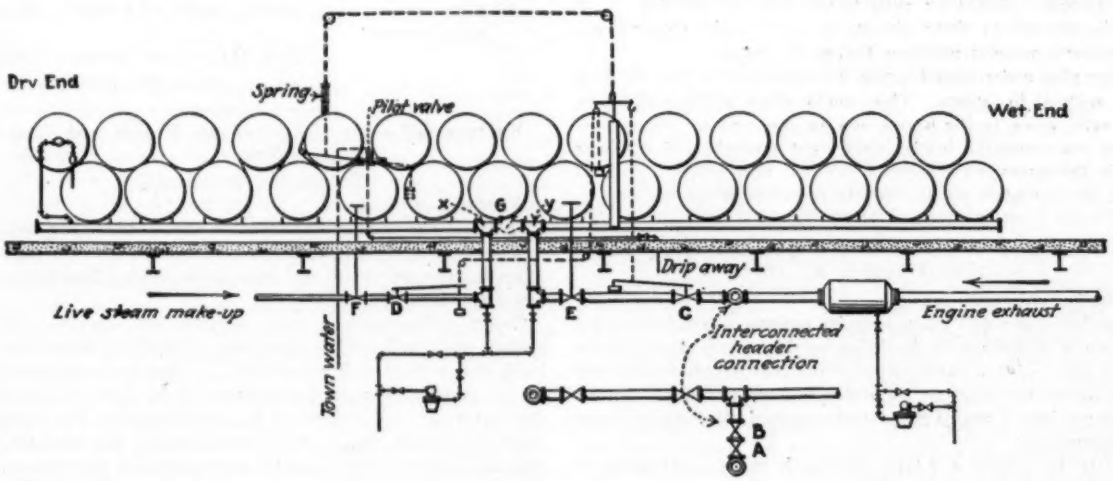


FIG. 6

Header connection to each machine and valve arrangement.

to 1,800,000 lb. and 1,426,000 lb. with average temperatures of 121.5 and 157 deg. F. respectively. Conditions of steam consumptions between the pulp mill and paper mill were practically identical.

Change in Hookup

After a year's operation an improvement on the machine hookup was suggested. Two disadvantages were obvious in the original arrangement: First, the necessity of the machine tenders shifting valves when going into a hard drying sheet; secondly, when a sheet was drying just below the header pressure, there was no reserve should the sheet tend to become wet. The drying control would open wide and the pressure in the machine would rise to 15 lb. and no farther. Unless the back-end tender was watchful, he was likely to have the paper come over wet.

The change suggested made the entire system automatic. Fig. 6 shows the arrangement, which simply includes the addition of a check valve *G* between the connections *x* and *y* on the paper-machine drying header, so as to divide it into two sections. The exhaust and interconnected-header steam enters the wet-end section through the valve *C* and flows through the check valve *G* into the dry-end section under normal operating conditions. Should the paper not dry at 15 lb. pressure, the control will go down still farther and open the live steam valve *D*, admitting high-pressure steam to the dry end of the header. The pressure in this section closes the check valve and rises to any reasonable pressure (consistent with drier safety) until the paper dries. When the control shuts off the live steam, exhaust steam at pressures controlled by valve *C* once more enter the dry-end section.

This arrangement eliminates high and uneven back pressures coming on the engine under the previous arrangement and before the interconnected header was installed. Every time high back pressures occurred, on one engine in particular, there was trouble—speed variations and stopping of the engine—as it was working with its throttle pressure fairly close to line pressure.

The foregoing describes fairly completely the operation of the system as it exists. Some minor changes are likely to be made at the boiler-house end, to meet changes proposed in the feed-water system. Should an even temperature of 200 deg. F. or more be desired in these alterations, only slight changes will be necessary, without affecting the whole system.

In one plan under consideration it is proposed to heat the feed water with 15-lb. steam. This would mean shifting the 8-in. relief valve going to the heater into an atmospheric escape, leaving the interconnected header open right through, and eliminate entirely the atmospheric relief valve that now exists. This, of course, is contingent on an entirely new feed-water system.

Lost Time and Wire Costs for Cylinder Equipment

SPECIAL INQUIRY No. 110

A member writes:

"I am building a mill where cylinder equipment will be installed and I would like to obtain the following data which should be the *average figures for a number of covering changes* rather than any special figures covering one particular job, unless the mill reporting has not kept a record and makes a special check-up to obtain this information.

1. State the number and type of cylinder machines (number of cylinders per machine) operated by your mill.
2. What product is made?
3. What kind of wires are used? (bronze, nickel alloy, etc.).
4. What is the total yearly cost of cylinder wires?
5. What is the cost of labor to replace a cylinder mold in the machine?
6. What is the cost due to decreased production on account of the time lost in changing a cylinder mold? (Data desired particularly for board or paper other than tissue.)
7. What is the cost of labor for reconditioning a cylinder mold?"

Note: That the above questions may be understood in the same way by all who may wish to participate, all should consider that the idle time of a paper machine consists of the number of hours and minutes the machine may be down; the tonnage lost on account of this shutdown at the rate of profit the machine should make per hour or minute in order to do its part in the way of dividends.

Inquiries handled under the Service to Members plan of TAPPI are of greatest value to all who participate when the replies received are from all types of technical men—executives, superintendents, engineers, and chemists. Please bring this inquiry to the attention of those qualified to contribute information of value.

All who contribute to this inquiry will receive a complete transcript, in blank, of all the replies received. Send replies to

R. G. MACDONALD, Sec. TAPPI,
18 E. 41st street, New York.

Operating Data for Drier Canvas

SPECIAL INQUIRY No. 111

A member writes:

"We would like to know what experience other mills, making kraft or news print at high speed are having with drier canvas. Data covering the following points should be given:

1. Kind of paper made.
2. Description of canvas (weave, ply, material).
3. Number of driers on machine.
4. Speed of machine.
5. Total length of drier canvas (top, bottom).
6. Weight of canvas per square foot.
7. a. Pounds paper produced per square foot of drier canvas.
   b. Pounds paper produced per pound of drier canvas.
8. Drier canvas cost per ton of finished paper.
10. Degree of finish effected by drier canvas.

"If asbestos drier canvas has been used the following data should be supplied:

11. Cost of asbestos drier canvas per ton of paper as compared to cotton drier canvas.
12. Pounds of paper per square foot of asbestos drier canvas compared to cotton drier canvas.
13. Give opinion as to relative merits of asbestos and cotton drier canvas."

R. G. MACDONALD, Secretary TAPPI,
18 E. 31st Street, New York.

Factors Affecting the Strength, Finish and Snap of Paper

SPECIAL INQUIRY No. 112

A member writes:

"I would like to know the ideas of various operating men as to how much machine conditions or other conditions in a paper mill affect the strength, finish and snap of the sheet. (I am particularly interested in news print.)

"Some mills require a much superior and stronger grade of ground wood and sulphite than other mills do to secure the same hard, strong sheet with good finish. Is this due to characteristics of the wood used in the manufacture of the pulp, or is it due to the formation of the sheet on the paper machine, the manner of drying or calendering, or some other cause? Provided the stock runs well on the machine, and I have particular reference to high speed machines, is the failure to secure strength, finish and a hard, snappy sheet always the fault of the raw material going into the sheet?"

Inquiries handled under the Service to Members plan of TAPPI are of greatest value to all who participate when the replies received are from all types of technical men; executives, superintendents, engineers, and chemists. Please bring this inquiry to the attention of those qualified to contribute information of value. All who contribute to this inquiry will receive a complete transcript, in blank, of all the replies received. Send replies to

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What Information Does the Banker Want?*

By Ralph E. Sperry

One authority (James H. Bliss, of Libby, McNeil & Libby) has stated that the important points to be considered in an analysis of a business for credit or investment purposes are:

1—Character, ability, experience and integrity of its organization;

2—Strength of its financial structure;

3—Business conditions affecting the industry and the individual concern; and

4—Conclusions determinable from analysis of financial statements.

It is therefore, evident that the information which the banker wants covers a very broad field. The intention in writing this paper has been to limit the comment to such phases of the subject as will be of particular interest to the accountancy profession.

Some of the thoughts brought out may, when first considered, appear unorthodox and radical. I would not have it understood that such thoughts are treated as an effort to criticize the profession but rather that an effort is being made to present to the profession a different perspective of its opportunities and obligations as seen through the eyes of one engaged in the field of finance.

Character, Capacity and Capital

It is perhaps trite but none the less true to say that all credit is based on the fundamentals of character, capacity and capital, but there is no way of telling just what weight each of these fundamentals should be given in making a decision on a given loan or on an ideal loan.

Character is that elusive, intangible, precious something which is judged by the record of experience and must ring true. The consensus of opinion among those who pass on credit appears to be, that any loan made in spite of the existence of a doubtful character record is a dangerous loan. New concerns find it difficult to get credit because the character elements are only in the making and the ultimate character product is a matter of conjecture.

Capacity is another fundamental which is somewhat intangible and therefore difficult to define. Capacity may be considered as an estimate of the ability of the management, a calculation of the possibilities of controlled properties and a general consideration of the prospects of accomplishing whatever is attempted.

Capital, as a loan fundamental, is more tangible and therefore more susceptible of measurement. Business employs a number of devices for the purpose of ascertaining the amount of capital employed.

The capital element is measured at times by an appraisal of the assets and liabilities existing. This method is most commonly resorted to in the case of contemplated change of ownership.

A second method of judging capital worth is in use by the investor and consists of capitalizing the earnings of an enterprise.

Probably the most common method of determining the capital worth of a business is the tabulation of its assets and liabilities in a balance-sheet. Balance-sheets are commonly prepared at regular intervals and are almost invariably based on modern accounting systems. A picture of the events which have taken place between the balance-sheet dates is fairly well sketched by a study of the operating figures and of the surplus account.

All these methods are useful and are often illuminating when applied at the same time to a given case. There can be little doubt, however, that in this day the best recognized method of measuring capital is that reflected in a series of reports based on a modern set of accounts.

Accounting Records Basis

It is interesting to reflect on how much more truly accounting records are a basis for measuring capital today than was the case a score of years ago. Ours is a generation which has seen great progress in the application of better methods to business. The last quarter century was ushered in with the organization of many great business colleges which have had an immeasureable influence. During the last half of this period, Uncle Sam has been a great ally to better accounting in business by confronting the business men of the country with laws which have made accounting a necessity. Federal reserve banks have passed rules which require statements in passing paper.

Speaking more directly to the subject, in commercial loans to manufacturing or mercantile concerns, it is indisputably true that the accountant's report is being relied upon to an ever increasing extent as a basis in forming conclusions regarding the soundness of loans to customers in mercantile and manufacturing pursuits.

While all audits are not made for the purpose of providing a basis upon which to obtain bank credit, it is safe to say that the major portion of them arises from this need, or that the resultant reports figure in credit arrangements. The accountant should, therefore, keep before him the possibility of every report being used as a basis for credit and should write his report accordingly.

Auditors verify. Accountants interpret. Seldom do banks receive reports so written that supplemental analysis is not required to bring out full interpretation. Banks make this analysis with much less information at hand than the accountants had. When banks make mistakes they usually favor themselves.

* From The Journal of Accountancy

It appears that there is, at times, an impression on the part of some members of the profession that they are representing the client and that they are justified in coloring the report so that it is cleverly and technically correct—but in many cases positively misleading. Fortunately, this attitude is the exception rather than the rule.

What an Audit Statement Should Show

John Eaton of the Merchants National Bank, Boston, Mass., once answered the question, "What does the banker expect an audited statement to show?" by saying, "He expects that it will set forth a correct (and impartial) picture of all the assets and all the liabilities of the company. And he expects that these various assets and liabilities will be classified and described with sufficient detail and exactness to enable him to form a satisfactory estimate of their value as a basis for granting credit."

Mr. Eaton later continued in the same address: "A plain condensed balance-sheet gives one little idea of a company's operations. Without knowing how the figures have been determined, an intelligent analysis of them is impossible. It gives the present position only, and no idea of how this position was reached. Altogether too many of our audited statements are of this character. They are of little more value than the company's own statement of its condition. Of course, we all like to see an accountant's name at the bottom of a statement, indicating that an outside expert has been over the books, but if the concern has in mind having the audit made as an assistance in obtaining credit, the object is almost entirely defeated if the bank is not furnished with details enabling it to make a proper analysis of the figures."

I personally subscribe to all of Mr. Eaton's ideas except that I would in many cases prefer a statement made direct by the borrower on our own form to the condensed balance-sheet with a short meaningless paragraph as a certificate.

Once having accepted a condensed certified balance-sheet, it is often very embarrassing to get the complete audit report or the additional data which would be had on our own financial statement forms. I cling to the view that accountants should only issue certified balance-sheets for the purpose of giving information to mercantile reporting agencies, newspapers, stockholders and perhaps to a few other groups and that all others, including executives of the concern and banks, should receive the complete report.

It is my opinion that the mere condensed certified balance-sheet is not fair from a credit viewpoint to either the client, the banker or the accountant. I think there should be supporting schedules describing the principal receivables, the principal payables, the chief classifications of the inventory, the investment holdings, the details of book value of properties the fact about subsidiary companies, and a list of the owners of the business including the stockholders of a corporation. This latter provision is especially a factor in California where the stockholders have a proportionate liability for the corporation debts.

An Important and Desirable Step

The statement forms which are generally used by banks are based very largely on the document "Approved Method for the Preparation of Balance-Sheet Statements." This document was prepared by the American Institute of Accountants and the federal trade commission and has been promulgated by the federal reserve bank. I believe that if this document were to receive the attention and the following that it deserves, a very important and desirable step would be taken in the direction of standardized statements for credit purposes.

Experience proves that there is a remarkable variance as to audit methods. Even in the case of balance-sheet audits, it is possible to make such checks and tests as will quickly and economically give the true situation without undue labor and expense.

There is a growing feeling that in many cases, if not most cases, it is as important for the accountant to circularize the accounts receivable as a part of the audit as it is to reconcile the cash account with the certificate from the bank. Far too often the audit of accounts receivable consists merely of checking a detailed list of the receivables with the controlling account.

There is also a group which believes that inventories are often far too lightly treated in accountants' reports. There can be little doubt that most of the manipulation of financial statements is accomplished by the inventory route. It is therefore no wonder that bankers are not particularly pleased when they read in a report that "the inventory quantities and prices were certified to us by responsible officers after which we satisfied ourselves as to the arithmetical accuracy." I think that it is vital to state whether or not the accountant was present at the time the physical inventory was taken. The method used in pricing the inventory is of great moment. The classification of the inventory on the one hand as to amount of raw material, material in process and finished material, and on the other hand as to description of the principal commodities included is vital but frequently neglected.

When there is material in process to deal with there should always be a discussion of how valuations have been stated. If there is no cost system, it is evident that the method of "by guess and by gosh" has been employed. The existence of a cost system calls for comment as to whether or not the system is satisfactory. It is essential to state whether or not the cost accounts tie in with the general books and on what basis the overhead is distributed and of what the overhead consists.

Accuracy of Perpetual Inventory

All cost systems require a perpetual inventory as a part of their plan and many firms not using cost systems make use of perpetual inventories to excellent advantage. The accuracy of the perpetual inventory is worthy of comment. Particular attention should be directed to the matter of obsolete items included as inventory items. Perpetual inventory records help to uncover inactive obsolete items.

Another balance-sheet section which is frequently slighted in the course of the audit is that of the liabilities. It is usual, of course, to get certificates as to the amount of the debt to banks. I think it is desirable to get such certificates also from the most important trade creditors and to make other careful checks to ascertain whether or not all liabilities to those creditors are correctly stated.

One of the most frequently neglected liability classifications is that of income tax. Experience has taught us that many clients have paid tax claims which were not shown on the books during the proper previous periods even though the cases were in litigation. An examination should be made of one or more income tax returns to determine whether they agree with the books after reconciliation and to establish whether or not the tax laws have been properly applied and minimum taxes paid.

Contingent liabilities are even more troublesome to ascertain and state correctly from the point of view of the accountant and the banker. The solution to the problem is far too often found in the complete absence of any statement about such items.

The net worth of a concern is frequently fearfully and wonderfully set up even on audited statements. In all cases this subject should be so treated that the investment, the retained earnings and the unearned or unrealized values reflected are clearly stated. This applies alike to individuals, partnerships and corporations. In the case of the last mentioned the promotion methods should be discussed and the details of authorized stock and issued stock carefully and fully considered, and there should be careful differentiation between surplus "available for dividends" and other surplus.

Certified Balance Sheets

In the case of the certified balance-sheet, particular care should be taken to give all possible data in the statement of the net worth. It is dangerous to analyze the surplus account starting merely with the balance at the beginning of the period

and reconciling to the balance at the end of the period, because facts important to the understanding of the true financial condition may be buried in the surplus account prior to the period under review.

The operating statement is always necessary in making a study of the financial position of a firm. All bankers would agree that the operating data, in summary form at least, should be a part of every financial report. It seems to me that it would be possible and quite advisable to incorporate this data in condensed certified balance-sheets by incorporating in the statement of surplus the added amount for cash sales and credit sales for the period and the deducted amounts for cost of revenues, executive salaries, interest, depreciation and other items important enough to have individual treatment. The difference between the revenues and the deductions would then be carried into the statement in the usual way.

A particular point is made of the necessity for operating data, as banks are more and more adopting the methods advocated by the Robert Morris Associates and particularly by their capable secretary, Alexander Wall, in examining financial data by the use of ratios. It would be well for all accountants to familiarize themselves with the data necessary to make such analysis for they would then have a much clearer conception of just what the banker wants. Mr. Wall's book, "Analytical Credits," would be one of my first recommendations for an accounting library. James H. Bliss of Libby, McNeil & Libby is another important contributor to this field.

Comparative Balance Sheets

There is an appreciated tendency on the part of some accountants to incorporate in their reports comparative balance-sheets and operating statements. A few go a step farther and actually follow the recommendation in the document "Approved Methods for the Preparation of Balance-Sheet Statements" wherein it is said. "A Statement of the disposition of the profits should then be prepared from this comparative balance-sheet as a further aid in impressing the meaning of the figures upon the mind." Such a statement has been very aptly termed a "where got-where gone" statement and is invariably looked on with favor.

It is a well known fact that some firms resort to the practice commonly known as "window dressing" at about the statement ment date. Bankers believe that there is an obligation on the part of the accountancy profession to aid in disclosing such attempts to disseminate misleading information.

Accountants would find the banks very attentive to discussions regarding the general efficiency of accounting methods and the existence or non-existence of a proper system of internal check. No doubt, if the true conditions were known, and if accountants were courageous enough to cover such points, bankers would take such action that the accountants would have much system work to do.

Much to Think of on Budgets

In recent years the business world has found much to think of in relation to the subject of budgets. Some concerns have employed the budget with remarkable results, but most firms have considered them impractical or inapplicable to their particular affairs.

Howard Coonley, president of the Walworth Manufacturing Company says, "Budgetary control is now one of the fundamental policies of the Walworth Company. It is our record of the past, our index for the present and our guide to the future. We believe it to be an essential factor in our success."

It seems probable that there would be fewer cases of "over-expansion" and "over-trading" if there were more budgets employed. The investigator may well inquire into the proposed financial plans with a view to determining how clear the management may be on the subject. The banker will be inclined to be comfortable as to the future quite in proportion to the care and thought which the business man demonstrates has been given to budget plans. Of course, the best possible test of the accuracy of the business man's budget plans is to compare past results with the corresponding budget plans. Consideration of the subject of the budget might well be made a part of the audit report.

Financial Year Basis

It is quite generally recognized that the financial reports of many concerns would be far more instructive and much easier to prepare if the concerns made the report on a fiscal year basis rather than a calendar-year basis. The advantages to the banker of receiving statements prepared at logical inventory dates rather than arbitrary as of December 31st include:

1—Greater accuracy in the statements, and

2—Availability of current financial data at the time when the borrower is in a position to consider its financial requirements for the coming season.

You all realize, of course, the advantage of fiscal-year reports to the accounting fraternity in helping to eliminate the "dull season." The matter can usually be arranged as far as the tax authorities are concerned.

To summarize, I would again lay before you the following ideas:

1—Financial statements and audit reports are not the sole basis for determination of whether or not loans are to be made.

2—When credit is involved, accountants, who make lengthy investigations, should in justice to themselves, their clients and the banker, standardize a policy of giving more detailed reports than the bare condensed certified balance-sheet, still so much in vogue. Detailed working papers in the accountant's file do not aid in making loans.

3—Modern bank practice calls for financial data which are frequently not to be found in the audited reports which are submitted with credit applications.

4—The accountant would be of more assistance to the client and the banker if he included an interpretation of the financial data in his reports.

5—Detailed schedules supporting various balance-sheet and operating-statement items are essential in making a credit interpretation of condition.

6—There are many avenues open for further cooperation between the accountant and the banker.

Brown-Bridge Mills Busy

TROY, Ohio, August 9, 1928.—Troy's newest industry, Brown-Bridge Mills, Inc., is making extraordinary progress, according to officers of the company who express themselves as greatly gratified at the business which has been coming in. It is said orders have been pouring in so rapidly that it has been necessary to run the big plant on East Water street at night.

The new factory is the last word in up-to-date machinery and methods for gumming all kinds of paper and cloth. Numerous labor saving devices have been installed with a view to produce a superior product at a low cost.

By September 1, it is said, the plant should be producing a large volume and giving employment to a substantial force of men and women, meaning a large payroll with its consequent effect on the prosperity of Troy.

C. W. Shartle was elected president at the organization meeting of the corporation held recently. Other officers elected were: P. H. Bridge, first vice president and treasurer; Clay D. Geisinger, second vice president; Herbert S. Brown, secretary, and Scott Bridge, assistant secretary-treasurer. The board of directors consists of C. W. Shartle, H. S. Brown, C. C. Willard, Clay Geisinger, Frank Mayo, Kenneth Hoffman, John Renahan, J. A. Shartle, Scott Bridge and P. H. Bridge.

The Brown-Bridge Mills is capitalized at $200,000 and it is said much of the stock has been taken locally by Troy people who have thus expressed their confidence in the management.

COST SECTION

Value of the Balance-Sheet to the Executive*

By Michael H. Sigafoos

The value of the balance-sheet to the executive depends on two things; careful preparation by one who is skillful in assembling statistics concerning the operation of a business and ability on the part of the executive to understand what these figures mean when applied to his own business.

The balance-sheet, no matter how comprehensive, is no better or more useful to the executive than his fitness to analyze it and to apply the good he gains from it, his fund of information necessarily being limited to the confines of his own preparatory training and study of plant operations. If schooled, he is able to trace and recognize the operations of the business reflected in the assets—current, invested and otherwise—as well as in the liabilities of the company.

The executive of today must be a man of many parts, able to face facts and grapple with realities. He should have a practical as well as an analytical mind, able to sense situations from a natural, physical viewpoint as they exist in the running of the plant and should recognize them when presented in condensed statistical form, as he reads the balance-sheet.

The Most Liquid Asset of All

The first item to engage his attention is the cash in bank—the most liquid asset of all. If the balance is heavy or unusually large, he wants to know how much of this amount is represented in loans from banks and, moreover, how much more cash will be needed to meet current requirements for payroll, vendors' bills due on a certain date, temporary bank loans maturing, which he wishes to avoid renewing, if possible, or to increase if necessary. He may also require funds for interest due on the funded debt or sinking-fund requirements, if any, and perhaps for the much coveted dividend declared, the payment of which is due within a fortnight.

Having satisfied himself as to cash requirements, he directs his attention to accounts receivable. He desires to know the estimated or expected receipts from this as well as other sources. There is always more or less speculation as to the actual, dependable revenue from this item on the balance-sheet and, therefore, the accountant has prepared a supplementary statement, showing the age and collectability of the accounts. There are certain accounts delinquent and others on which definite promises to pay have been made. The executive knows from the information gained from his credit man that certain customers, not having discounted, which is seasonal with them, do not fail in their full-time remittances. Moreover, he may be able to obtain a trade acceptance or better still, notes which can be discounted. He has now at least a starting point. He may have to take a deep breath, several of them in fact, before he can see his way clear to the next step—that of repairing his inventory of raw materials which is below the normal line and, in view of market conditions, does not warrant his waiting to buy the required material for orders carrying a definite delivery date; whereas, thirty days prior to this time he could have covered his needs possibly at less than he can today—a penalty for gambling against the market. His ability to analyze the balance-sheet for a way to successful financing is his one refuge.

Market Fluctuations

Of necessity, the executive must have a running knowledge of market fluctuations peculiar to the class of merchandise used in his particular line of manufacture. He consults with his purchasing agent, learns of deliveries due, immediately confers with the plant foreman as to the floating inventory set forth in the inventory analyses and inquires if there is any surplus of raw material assigned for fabrication on stock orders, possibly a little long, on which he can borrow, replacing it as soon as he is covered for promised deliveries. In some instances, the concerns he buys from guarantee prices against decline; in others he is not so fortunate.

He summons his sales manager and learns the details of orders booked, for some of which the goods have been partly processed or finished, ready for shipment. His problem is not wholly solved. Again he consults the analysis of inventory in process and otherwise. On some of the large orders under way a cash deposit is required. As the processing of the goods progresses, more deposits are received and by the date of shipment as much as 50 or 75 percent is remitted by the buyer, the balance due being paid on arrival of the goods at destination after examination, approval and acceptance.

By the statistics furnished in this schedule, the executive is able to determine from the balance-sheet to what extent he may look for relief from this source and gauges fairly definitely the amount of dependable cash coming in within the next week or ten days. The reason for requiring advance payments on large orders as they progress, which may take six months' time or more to complete, is to cover the outlay of direct and indirect labor and overhead, as well as material. This is not a usual practice, but its occasional occurrence is known from personal experience, and it is a condition which helps illustrate the value of the balance-sheet to the reader thereof.

The executive, having satisfied himself that he can reasonably meet the requirements for orders promised, in order to determine further his financing plan next proceeds to analyze the amount of unfilled orders with regard to quantities of materials necessary to complete them, matching this against the amount of purchases he must make for future delivery and balancing this with any surplus he may have over mill-level requirements—another supplement to the balance-sheet.

One Serious Feature

There is one serious feature with which every executive is confronted, i.e., the amount of inventory, raw, in process and semi-finished, necessary to balance the requirements of his mill. He dislikes to disturb this balance except in the most extreme instances as the financing of his company naturally depends upon the fluctuation of orders received and deliveries promised. This inventory should always be carried at the lowest possible quantity and cost, and although it may turn over and change any number of times during the year there is always required a certain amount of floating inventory to balance the run of the mill and also "time in" with departments having continuous operations. We speak of "priming a pump". As the amount of water or other liquid carried at the valve level is to the pump, so is the floating inventory to a well balanced factory flow of production. This inventory should be the minimum quantity valued and carried at the lowest possible cost. If it can be replaced at a lower figure, it should assume this value, but never should be rated at a current cost of replacement. It is a most certain conclusion that low market levels return from time to time and the manufacturer should protect himself against such periods to the extent that when the market does drop, he is reasonably sure his mill-balance inventory needs little if any writing down, at any rate none resulting from appreciation over original cost.

Where investments are carried by corporations whose surplus cash has been temporarily converted until certain requirements are due, the executive determines whether the investment has increased or decreased, in comparison with the previous month

* Address delivered at a meeting of the Philadelphia Chapter, Pennsylvania Inst. of C. P. A. (From the Journal of Accountancy.)

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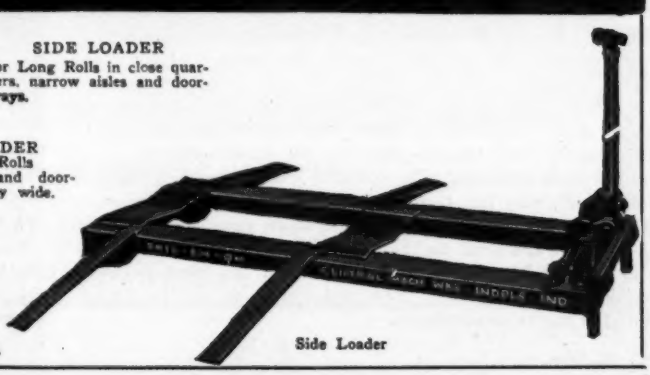

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or possibly as far back as its inception. He also scrutinizes the plant investment and looks for changes in it. If it has increased by reason of improved machinery purchased, he desires to measure the value of the investment by the returns estimated by his engineers. He must know if the resultant economy is from greater speed with corresponding output and with the same amount of labor or with less labor-power consumption considered.

Finished Product Actually Delivered

The executive passes on to the sales for the month reflected in accounts receivable, having before him an analysis of both. We speak of sales as the finished product—actually delivered and charged to the customers on the books of account. With some concerns, of one of which I have intimate knowledge, the classification of sales shows the profit or loss of each class of product manufactured, together with the percentage, and also a calculation of the total. The executive may find some surprises in this analysis compared with the original estimate when the business was undertaken. The surprises will be both ways. He realizes that he can not intelligently operate the business if he does not know which line of output shows a loss, splits even or yields a profit. It is beyond peradventure that the average manufacturer, large or small guesses or has the wrong information entirely as to whether he is making or losing money. In many instances the product pushed the hardest, in the belief that it is the most profitable, is a losing proposition. A well regulated sea of books—condensed in the form of a comprehensive balance-sheet-will serve well. The concern that knows its profits every month on each class of output sold is likely to be successful but, as far as such information is concerned, possibly is the exception.

Before the executive is through with the analysis of his sales, he confers with his sales manager to ascertain whether or not the figures reflected on the papers before him seem correct according to the judgment and intimate personal knowledge of the sales manager, who must have at command a comprehensive digest of the various selling branches and know beyond a reasonable doubt whether or not the executive is informed on generalities and thinking in terms on a par with his own line of reasoning.

It is an old story, but one, I believe, appropriate to this discussion that while selling is the big game, the buying makes for the selling and that conservative purchases on a carefully studied market, due consideration being given to orders in hand and to prospective business, will always bring good results to the executive who is wide awake, well informed and endowed with a good lump of common "horse sense".

The executive turns to his record of statistics to study the turnover of his inventory with regard to sales, and his net investment of capital and surplus, whichever way he chooses to figure it, compared with previous periods. He times this turnover with the business, not only in volume and tonnage, but also as to periods, which have special significance. The volume of sales must be compared not only with that of the same month of a past year, but with a similar period, whether two, three, six or more months or a year ago. Volume, however, is more or less a misnomer at times. Therefore, consideration must be given to tonnage and price fluctuations must be compared, so that the volume of a given period may be reconciled with the current volume, to the end that judgment, after consideration of facts reflected in the sales department, may be fair to all concerned when driving hard for increased volume in sales.

Another glance at his statistical record, prompted by the balance-sheet, shows the executive the amount of money spent for obtaining new business and for the maintenance of long-standing trade relations. The executive who thinks the proverbial "John Doe", who has been his customer for five, ten or more years, does not need calling upon is much mistaken. Old customers, large and small buyers, are harder to hold than new trade is to obtain. The former require attention and must be given consideration occasionally. New customers must not be accorded all the favors and attention.

Just how much money is being spent by the general sales manager and his corps of salesmen is reflected in another supplement to the balance-sheet. Every dollar of sales value should show a percentage of cost and, naturally, an expected profit. This dollar must be tied in with tonnage, footage or otherwise, whichever is the determining factor to gauge volume, and from the result shown the executive must resolve by good judgment whether or not increases or decreases in percentages mean anything more than arithmetical determinations, comparative, attractive and interesting. He must seek out and determine (and here is where his training and natural fitness come in, together with ability to read and analyze his balance-sheet and operating statements) whether or not the actual physical conditions correspond with the statistical facts before him. The figures can not be changed, but the conditions may be governed and directed to spell better results on capital invested.

Those of the accountancy profession, who have had opportunity to study through actual experience the role of an executive, find that should places be exchanged they would swallow lots of their own medicine, the doses not always being in homeopathic proportions. It is one thing to advise; it is another to execute the same advice.

Variation of Mill Overhead

One of the principal items causing the executive much concern is the variation of consumed, unconsumed and also overconsumed mill overhead. This is reflected indirectly on the balance-sheet and is supplementary to it. He must be careful that the customers derive the benefit from the overconsumed overhead. It is not fair to the customer, much less to the company, to charge in the cost set-up when bidding for business the unconsumed overhead of the mill and move this on to the "good customer" who gives the order.

The admission of this practice refutes the argument that overhead in any factory is the hardest problem to contend with and that in many instances it is cheaper to operate with an overhead loss than to shut down a department, if not the entire works, for a season. If the plant is shut down, trade of long standing is neglected and labor will naturally drift away to other employment.

The balance-sheet is only a partial aid to the executive in assisting him in matters of importance, and the schedules supplementary to it, setting forth certain vital detail, are factors to be considered. It is the small fox that destroys the grapes, the small leak that sinks big ships, and the time to remedy all matters in a large manufacturing plant is when they are discovered—this by exhaustive analyses. They must not be allowed to drag along indefinitely with the idea which is false economy, that too much money is being spent for repairs and upkeep and that things will "shift" for a time. One must always be ready for marching orders.

In conclusion and with a last reference to the time-honored and often-much-abused balance-sheet, with its supplementary pages of information—it is of great value and indispensable to the executive. Conversely, if improperly prepared or not carefully studied, or if it is placed in the hands of an executive not possessing the proper qualifications or natural fitness, it is a dangerous instrument. Its greatest value is at a time nearest to the closing of the month's business. It is of no value, beyond possibly interesting reading, when it comes to the executive and his board of directors thirty days, and and sometimes later, after the date of periodic closing of operations. In many instances, financial statements of corporations are available by the 10th and 12th of the succeeding month. Where this condition exists one may look for prosperity and a well managed corporation.

Knowledge and power are twin factors. Each depends upon the other and, when unevenly teamed, they leave the loaded vehicle, industry, stranded by the wayside, surpassed by concerns equipped with a better balance of power.

BOLTON QUALITY

JOHN W. BOLTON & SONS, INC.

EAGLE KNIFE & BAR WORKS

Lawrence, Mass.

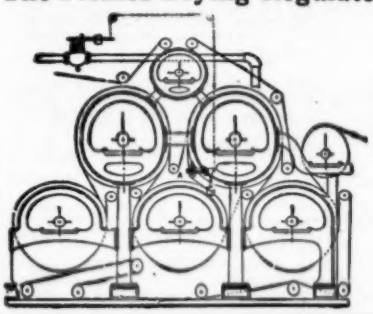
The only firm making KNIVES for every machine from wood pile to finishing room.

It's the KNIVES that do the work!

The Pickles Drying Regulator

WE ARE SAFE IN OUR PROPOSITION

YOU'LL MAKE NO MISTAKE IN ACCEPTING IT



Pickles Drying Regulator

will do everything we claim for it and more. The test costs you nothing until you are satisfied. Many mills tried one and now have every machine equipped. Write for list of users and other information.

W. F. PICKLES **Buckland, Conn.**

HIGHEST SPEED

Paper Bag Machinery

Get My Quotations Before Placing Your Orders

Special Machinery Designed and Built

A. L. PARRISH,

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Cotton and Paper Rolls
Super Calenders
Friction Calenders
Embossing Calenders
Hydraulic Presses and Pumps

Successors to the Granger Foundry & Machine Co.

The Textile-Finishing Machinery Company

PROVIDENCE, R. I.

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING AUGUST 4, 1928

SUMMARY

Cigarette paper	311 cs.
Wall paper	7 bls., 16 cs.
Paper hangings	19 bls., 39 cs.
Painted paper	5 cs.
News print	1,044 rolls, 94 bls.
Printing paper	291 cs.
Wrapping paper	3 bls., 56 cs.
Packing paper	91 bls., 6 cs.
Parchment paper	23 bls.
Decalcomania paper	32 cs.
Fancy paper	1 cs.
Filter paper	50 bls., 40 cs.
Drawing paper	4 cs.
Colored paper	3 bls., 1 cs.
Litmus paper	1 cs.
Tissue paper	106 cs.
Stencil paper and ink	53 cs.
Design paper	1 cs.
Surface coated paper	166 cs.
Gold coated paper	7 cs.
Metal paper	30 cs.
Coated paper	1 cs.
Photo paper	9 cs.
Cover paper	7 cs.
Cellophane paper	1 cs.
Writing paper	33 cs.
Straw paper	559 rolls
Miscellaneous paper	14 bls., 110 cs.

CIGARETTE PAPER

De Manduit Paper Corp., Pipestone County, Havre, 311 cs.

WALL PAPER

Morton Sundour & Co., Inc., Aquitania, Southampton, 1 cs.

J. E. Bernard & Co., Aquitania, Southampton, 1 cs.

Globe Shipping Co., A. Ballin, Hamburg, 3 cs., 1 ble.

F. J. Emmerich, A. Ballin, Hamburg, 6 bls., 2 cs.

A. C. Dodman, Jr., Inc., Majestic, Southampton, 6 cs., 2 bls.

J. E. Bernard & Co., Majestic, Southampton, 1 cs.

PAPER HANGINGS

Whiting & Patterson Co., Inc., Aquitania, Southampton, 14 cs.

W. H. S. Lloyd & Co., Caronia, London, 9 bls., 1 cs.

W. H. S. Lloyd & Co., Laconia, Liverpool, 5 bls.

A. C. Dodman, Jr., Inc., Laconia, Liverpool, 5 bls.

Whiting & Patterson Co., Inc., Berengaria, Southampton, 14 cs.

PAINTED PAPER

A. L. Diament & Co., France, Havre, 5 cs.

NEWS PRINT

A. S. Zabriskie, Dresden, Bremen, 94 bls.

F. Henjes, Jr., A. Ballin, Hamburg, 65 rolls.

Perkins Goodwin & Co., A. Ballin, Hamburg, 523 rolls.

Gilman Paper Co., Hjelmaren, Norrkoeping, 455 rolls.

PRINTING PAPER

P. C. Zuhlke, Belgenland, Antwerp, 64 cs.

Lincoln Paper Co., Dresden, Bremen, 23 cs.

Judson Freight F'd'g Co., Dresden, Bremen, 14 cs.

Walker, Goulard Plehn Co., Dresden, Bremen, 132 cs.

American Express Co., Dresden, Bremen, 41 cs.

Kupfer Bros. & Co., Dresden, Bremen, 5 cs.

Van Oppen & Co., Amer. Banker, London, 1 cs.

E. Dietzgen & Co., A. Ballin, Hamburg, 11 cs.

WRAPPING PAPER

H. Reeve Angel & Co., Inc., Belgenland, Antwerp, 1 cs.

National City Bank, Belgenland, Antwerp, 55 cs., 3 bls.

PACKING PAPER

Steiner Paper Corp., Oscar II, Oslo, 66 bls.

Haule Wax Paper Manfg. Co., A. Ballin, Hamburg, 6 cs.

Chemical National Bank, Wytheville, Rotterdam, 25 bls.

PARCHMENT PAPER

Walker Goulard Plehn Co., A. Ballin, Hamburg, 23 bls.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Adriatic, Liverpool, 19 cs. (duplex); 13 cs. (simplex).

FANCY PAPER

H. D. Catty & Co., France, Havre, 1 cs.

FILTER PAPER

Tital Shipping Co., Collamer, Havre, 2 cs.

H. Reeve Angel & Co., Inc., Caronia, London, 5 cs.

C. Schleicher & Schull Co., A. Ballin, Hamburg, 18 cs.

A. Giese & Son, A. Ballin, Hamburg, 4 cs.

H. Reeve Angel & Co., Inc., Majestic, Southampton, 11 cs., 50 bls.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Caronia, London, 4 cs.

COLORED PAPER

P. H. Petry & Co., Dresden, Bremen, 3 bls., 1 cs.

LITMUS PAPER

Johnson & Sons, Inc., Amer. Banker, London, 1 cs.

TISSUE PAPER

G. W. Sheldon & Co., Amer. Banker, London, 3 cs.

Old Master Paper & Pulp Corp., A. Ballin, Hamburg, 95 cs.

O. Hommel & Co., Adriatic, Liverpool, 3 cs.

Meadows Wye & Co., Laconia, Liverpool, 5 cs.

STENCIL PAPER AND INK

Arlac Dry Stencil Co., A. Ballin, Hamburg, 53 cs.

DESIGN PAPER

Wilkes-Barre Lace Manfg. Co., Laconia, Liverpool, 1 cs.

SURFACE COATED PAPER

P. C. Zuhlke, Belgenland, Antwerp, 98 cs.

Gevaert Co. of America, Belgeniand, Antwerp, 66 cs.

Globe Shipping Co., A. Ballin, Hamburg, 2 cs.

GOLD COATED PAPER

F. Murray Hill, Dresden, Bremen, 7 cs.

METAL PAPER

Hensel Bruckman & Lorbacher, Dresden, Bremen, 30 cs.

COATED PAPER

American Exchange Irving Trust Co., A. Ballin, Hamburg, 1 cs.

PHOTO PAPER

J. H. Schroeder Banking Corp., Dresden, Bremen, 9 cs.

COVER PAPER

International F'd'g Co., A. Ballin, Hamburg, 7 cs.

CELLOPHANE PAPER

M. J. Corbett & Co., Aquitania, Southampton, 1 cs.

WRITING PAPER

A. Goodman & Co., Aquitania, Southampton, 4 cs.

Globe Shipping Co., Aquitania, Southampton, 2 cs.

Heemsoth Basse & Co., Aquitania, Southampton, 1 cs.

Stern Bros., Aquitania, Southampton, 1 cs.

C. S. Clark & Co., Aquitania, Southampton, 1 cs.

Guibout freres, Aquitania, Southampton, 5 cs.

Freedman & Slater, A. Baliin, Hamburg, 15 cs.

Guibout freres, France, Havre, 4 cs.

STRAW PAPER

Bank of The United States, A. Ballin, Hamburg, 559 rolls.

MISCELLANEOUS PAPER

Walker, Goulard Plehn Co., Oscar II, Oslo, 14 bls.

P. H. Petry & Co., A. Ballin, Hamburg, 2 cs.

Globe Shipping Co., A. Ballin, Hamburg, 47 cs.

Keller Dorian Paper Co., France, Havre, 19 cs.

Japan Paper Co., Duilio, Genoa, 26 cs.

Public National Bank, Kepwick Hall, Marseilles, 16 cs.

RAGS, BAGGING, ETC.

Castle & Overton, Inc., City of Alton, Rotterdam, 65 bls. rags.

American Exchange Irving Trust Co., City of Alton, Rotterdam, 25 bls. rags.

Overton & Co., City of Alton, Rotterdam, 35 bls. bagging.

Darmstadt Scott & Courtney, Pipestone County, Dunkirk, 50 bls. bagging; 26 bls. rags.

Leigh Textile Co., Pipestone County, Dunkirk, 55 bls. rags.

G. W. Millar & Co., Pipestone County, Dunkirk, 86 bls. rags.

Albany Fiber Co., Pipestone County, Dunkirk, 4 bls. rags.

Atlas Waste Manfg. Co., Pipestone County, Havre, 16 bls. rags.

G. W. Millar & Co., Pipestone County, Havre, 61 bls. rags.

A. W. Fenton, Inc., Pipestone County, Havre, 6 bls. rags.

B. D. Kaplan, Pipestone County, Havre, 31 bls. rags.

Darmstadt Scott & Courtney, Pipestone County, Havre, 10 bls. rags.

V. Galaup, Collamer, Havre, 117 bls. rags.

Brown Bros. & Co., Collamer, Dunkirk, 100 bls. rags.

Kidder, Peabody Accept. Corp., Singapore Maru, Hamburg, 159 bls. rags.

A. W. Fenton, Inc., Singapore Maru, Hamburg, 38 bls. rags.

B. D. Kaplan, Dresden, Bremen, 16 bls. rags.

Jaffe Products Co., Sud Atlantico, Havana, 40 bls. rags.

Castle & Overton, Inc., Sud Atlantico, South America, 47 bls. rags.

Chase National Bank, A. Ballin, Hamburg, 72 bls. rags.

Bank of The Manhattan Co., Minnekahda, London, 220 bls. rags.

C. R. Spence, Anacortes, Dublin, 115 bls. rags.

Brown Bros. & Co., Anacortes, Glasgow, 102 bls. paper stock.

E. J. Keller Co., Inc., Elzasier, ——, 64 bls. rags.

Castle & Overton, Inc., Elzasier, Antwerp, 326 bls. rags.

Union Bank & Trust Co., Elzasier, Antwerp, 103 bls. bagging.

A. Block & Co., Bannack, Manchester, 40 bls. new cuttings.

J. Cohen Sons, Inc., Bannack, Manchester, 18 bls. new cuttings.

Equitable Trust Co., Bannack, Manchester, 232 bls. rags.

E. Butterworth & Co., Inc., Bannack, Manchester, 103 bls. bagging.

E. J. Keller Co., Inc., Bannack, ——, 72 bls. bagging.

S. Birkenstein & Sons, Cabo Torres, Bilbao, 403 bls. rags.

American Rag Trading Co., Cabo Torres, Bilbao, 156 bls. rags.

A. W. Fenton, Inc., Maria, Trieste, 139 bls. rags.

Castle & Overton, Inc., Maria, Venice, 66 bls. rags.

Overton & Co., Maria, Venice, 37 bls. bagging.

Guaranty Trust Co., Maria, Naples, 203 bls. rags.

Equitable Trust Co., Kepwick Hall, Barcelona, 91 bls. rags.

Castle & Overton, Inc., Marengo, Hull, 59 bls. rags.

National City Bank, Marengo, Newcastle, 19 bls. rags.

G. W. Millar & Co., Marengo, New Castle, 324 bls. rags; 99 bls. bagging.

L. Leibowitz & Co., Marengo, Newcastle, 8 bls. rags.

Darmstadt Scott & Courtney, Marengo, Antwerp, 12 bls. rags; 291 bls. bagging.

Castle & Overton, Inc., Marengo, Antwerp, 37 bls. bagging; 71 bls. rags.

A. Block & Co., Marengo, Antwerp, 78 bls. flax waste; 87 bls. bagging.

E. J. Keller Co., Inc., Marengo, ——, 122 bls. linen threads; 1,210 bls. flax waste; 111 bls. rags.

E. Butterworth & Co., Inc., Marengo, Antwerp, 229 bls. rags.

G. W. Millar & Co., Marengo, Antwerp, 51 bls. bagging.

Railway Manfg. & Supply Co., Marengo, Antwerp, 144 bls. bagging.

S. Birkenstein & Sons, Inc., Marengo, Antwerp, 148 bls. bagging.

J. Rosenberg, Marengo, Antwerp, 307 bls. bagging.

Castle & Overton, Inc., Marengo, Antwerp, 101 bls. flax waste.

A. W. Fenton, Inc., Wytheville, Rotterdam, 86 bls. rags.

Railway Manfg. & Supply Co., Wytheville, Rotterdam, 255 bls. thread waste.

W. Steck & Co., Wytheville, Rotterdam, 89 bls. thread waste.

Green Hamilton & Co., Wytheville, Rotterdam, 325 bls. thread waste.

Castle & Overton, Inc., Wytheville, Rotterdam, 48 bls. rags.

Castle & Overton, Inc., Eastern Dawn, Antwerp, 94 bls. rags.

Castle & Overton, Inc., Oscar II, Copenhagen, 45 bls. rags.

(Continued on page 76)

BROWN COMPANY'S

ALPHA

is the demonstrated result of this Company's forty years of research in pulp making.

¶ It now ranks among the preferred materials for the making of higher grade papers.

¶ It yields the papermaker a profit and gives his patrons more than their money's worth.

BROWN COMPANY

founded 1852

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NEW YORK CHICAGO ST. LOUIS MINNEAPOLIS
BOSTON PITTSBURGH ATLANTA SAN FRANCISCO

The Babcock & Wilcox Co.

85 LIBERTY STREET, NEW YORK

ESTABLISHED 1868

Water Tube Boilers Steam Superheaters
Economizers Air Preheaters
Chain Grate Stokers Oil Burners
Refractories
Seamless Tube and Piping

BRANCH OFFICES

ATLANTA	Candler Building
BOSTON	80 Federal Street
CHICAGO	Marquette Building
CINCINNATI	Traction Building
CLEVELAND	Guardian Building
DALLAS, TEXAS	Magnolia Building
DENVER	444 Seventeenth Street
DETROIT	Ford Building
HOUSTON, TEXAS	Electric Building
LOS ANGELES	Central Building
NEW ORLEANS	344 Camp Street
PHILADELPHIA	Packard Building
PHOENIX, ARIZ.	Heard Building
PITTSBURGH	Farmers Deposit Bank Building
PORTLAND, ORE.	Failing Building
SALT LAKE CITY	Kearns Building
SAN FRANCISCO	Sheldon Building
SEATTLE	L. C. Smith Building
HONOLULU, T. H.	Castle & Cooke Building
HAVANA, CUBA	Calle de Aguiar 104
SAN JUAN, P. R.	Recinto Sur 51

Where "PALCO" Packing Lifts the Load Off the Shaft.

Photograph of a Centrifugal Pump Shaft badly worn by working against flax packing which did not carry sufficient lubricant to prevent friction.

STYLE C PACKING

For pumps handling caustic soda and similar chemicals. Its lubricant can be relied upon to resist the cutting action of these chemicals, and to keep the pump shaft so perfectly lubricated as to avoid friction. To prove our claims let us send you a free working sample to test under your own conditions.

GREENE, TWEED & CO.

Sole Manufacturers

109 Duane St., New York

BOILERS TANKS —and all STEEL PLATE WORK

— NOTE —

Our experienced Sales Engineers would consider it a favor to work with you upon any of the above classes of work, and to quote prices and delivery. We've had nearly a HALF CENTURY'S EXPERIENCE.—which, by the way, is reflected in the numerous "repeat orders" received.

COATESVILLE BOILER WORKS

Boilers - Tanks - Steel Plate Work

Main Office and Works—COATESVILLE, PA.

Philadelphia 111 S. 15th St. | New York 30 Church St. | Boston 141 Milk St. | San Francisco 945 Pine St.
Pittsburgh Union Trust Bldg. | Baltimore Lexington Bldg. | Newark 60 Park Place

Imports of Paper and Paper Stock

(*Continued from page 74*)

OLD ROPE

American Exchange Irving Trust Co., City of Alton, Rotterdam, 51 coils.
Kidder Peabody Accep. Corp., Collamer, Havre, 77 bls.
Brown Bros. & Co., Elzasier, Antwerp, 151 coils.
Brown Bros. & Co., Marengo, Hull, 84 coils.
Brown Bros. & Co., Marengo, Newcastle, 68 coils.
E. J. Keller Co., Inc., Marengo, ——, 83 coils.
Brown Bros. & Co., Cabo Torres, Pasages, 1,135 rolls.

CASEIN

Equitable Trust Co., A. Ballin, Hamburg, 1,067 bags, 79,890 ks.
Equitable Trust Co., France, Havre, 267 bags.

WOOD PULP

E. J. Keller Co., Inc., Singapore Maru, ——, 1,100 bls. wood pulp, 170 tons.
Woodpulp Service Corp., Dresden, Bremen, 2,500 bls. wood pulp.
Chase National Bank, Oscar II, Oslo, 200 bls. sulphite pulp.
Castle & Overton, Inc., A. Ballin, Hamburg, 2,487 bls. wood pulp, 371 tons.
J. Andersen & Co., Aggersund, Soderhamn, 125 bls. sulphite, 25 tons.
Bulkley Dunton & Co., Aggersund, ——, 3,175 bls. sulphite, 635 tons; 2,606 bls. sulphate, 521 tons.
J. Andersen & Co., Aggersund, Hernosand, 1,800 bls. sulphate, 360 tons; 3,300 bls. sulphite, 550 tons.
Bulkley Dunton & Co., Aggersund, ——, 600 bls. sulphite, 100 tons; 1,800 bls. sulphate.
American Exchange Irving Trust Co., Aggersund, Hernosand, 300 bls. sulphate, 50 tons.
Pagel Horton & Co., Inc., Aggersund, Pitea, 150 bls. sulphate, 25 tons.
Atterbury Bros., Inc., Norefjord, Oslo, 500 bls. wood pulp.
O. E. Kiaer, Norefjord, Oslo, 1,500 bls. wood pulp.
Polaris Shipping Co., C. Gerhard, Sonora, 1,010 cords wood pulp.
Woodpulp Service Corp., Stavangerfjord, Oslo, 800 bls. wood pulp.

PHILADELPHIA IMPORTS.

WEEK ENDING AUGUST 4, 1928

E. J. Keller Co., Inc., City of Alton, ——, 175 bls. rags; 176 bls. bagging; 135 bls. old carpets.
S. E. Ingber, City of Alton, Rotterdam, 196 bls. rags.
Pagel Horton & Co., Inc., Aggersund, Pitea, 300 bls. sulphate, 50 tons.
J. Andersen & Co., Aggersund, Pitea, 1,800 bls. sulphate, 300 tons.
J. Anderson & Co., Aggersund, Hernosand, 3,000 bls. sulphate, 600 tons.
Bulkley Dunton & Co., Aggersund, ——, 1,000 bls. sulphate, 200 tons.
Brown Bros. & Co., Boston City, Bristol, 254 bls. old rope.
Bank of The Manhattan Co., Boston City, Bristol, 254 bls. rags.
C. R. Spence & Co., Boston City, Bristol, 155 bls. rags.
Gilman Paper Co., Hjelmaren, Norrkoeping, 149 rolls news print.
E. J. Keller Co., Inc., Beemsterdyk, ——, 67 bls. rags.
Castle & Overton, Inc., Beemsterdyk, Holland, 1,152 bls. wood pulp.
Castle & Overton, Inc., Belmore Head, Belgium, 582 bls. rags.
Castle & Overton, Inc., London Corporation, England, 128 bls. rags.
Castle & Overton, Inc., Chicago City, England, 141 bls. rags.
Castle & Overton, Inc., Manchester Corporation, England, 82 bls. rags.
Castle & Overton, Inc., Dakarian, England, 371 bls. rags.

NEWPORT NEWS IMPORTS.

WEEK ENDING AUGUST 4, 1928

Castle & Overton, Inc., Beemsterdyk, Holland, 720 bls. wood pulp.

CHARLESTON IMPORTS

WEEK ENDING AUGUST 4, 1928

Castle & Overton, Inc., Cold Water, England, 72 bls. bagging.

BALTIMORE IMPORTS.

WEEK ENDING AUGUST 4, 1928

Congoleum Nairn Co., Collamer, Dunkirk, 458 bls. rags.
Congoleum Nairn Co., Collamer, Havre, 679 bls. rags.
Congoleum Nairn Co., Collamer, Havre, 215 bls. bagging.
Ayres W. C. Jones Co., Collamer, Havre, 40 bls. flax waste.
Castle & Overton, Inc., Beemsterdyk, Holland, 717 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING AUGUST 4, 1928

H. Reeve Angel & Co., Inc., Sagoporack, Kotka, 157 rolls news print.
Virginian & Pilot Publishing Co., Sagoporack, Kotka, 205 rolls news print.
Old Dominion Paper Co., Sagoporack, Kotka, 141 bls. news print.
Virginia Paper Co., Sagoporack, Kotka, 146 bls. news print.

BOSTON IMPORTS

WEEK ENDING AUGUST 4, 1928

Bulkley Dunton & Co., City of Alton, ——, 500 bls. wood pulp, 100 tons.
American Express Co., City of Alton, Rotterdam, 94 rolls paper.
Guaranty Trust Co., Clontarf, Naples, 54 bls. rags.
Forte Moran Co., Pipestone County, Dunkirk, 78 bls. rags.
2nd National Bank of Boston, Pipestone County, Dunkirk, 14 bls. thread waste.
Old Colony Trust Co., Pipestone County, Dunkirk, 16 bls. thread waste.
1st National Bank of Boston, Pipestone County, Dunkirk, 5 bls. rags.
Train Smith & Co., Pipestone County, Dunkirk, 119 bls. rags.
Ayres W. C. Jones Co., Pipestone County, Dunkirk, 17 bls. rags.
Katzenstein & Keene, Inc., Pipestone County, Dunkirk, 219 bls. rags.
Roach & Craven, Pipestone County, Havre, 1 cs. wallpaper.
Madison State Bank, Pipestone County, Havre, 75 coils old rope.
Bank of Commerce & Trust Co., Pipestone County, Havre, 302 bls. cotton waste.
Train Smith & Co., Pipestone County, Havre, 604 bls. rags.
Katzenstein & Keene, Inc., Pipestone County, Havre, 98 bls. rags.
Ayres W. C. Jones Co., Pipestone County, Havre, 10 bls. cotton waste.
Buck Kiaer & Co., Inc., Hjelmaren, Stockholm, 1,500 bls. chemical pulp.
Castle & Overton, Inc., Beemsterdyk, Holland, 887 bls. wood pulp.

PORTLAND IMPORTS

WEEK ENDING AUGUST 4, 1928

Lagerloef Trading Co., Sagoporack, Kemi, 1,270 bls. sulphite, 212 tons.
Lagerloef Trading Co., Sagoporack, Raumo, 1,300 bls. sulphite, 214 tons.

D. W. Bergstrom Passes Away

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., August 6, 1928.—Wisconsin lost one of its prominent paper manufacturers in the death on July 29 of D. W. Bergstrom, president of the Bergstrom Paper Company, Neenah, Wis. He had been ill for several weeks and died twenty-four hours after the demise of his brother, G. O. Bergstrom, president of the Bergstrom Stove Company, of Neenah.

The paper manufacturer was 77 years old. He was one of the organizers of the Bergstrom Paper Company when it was established in 1904 and had been its president since that time. He was also a director of the First National Bank of Neenah for the last 35 years.

Burial took place at Neenah, in Oak Hill cemetery, to which he was the donor of a large and beautiful chapel several years ago. The survivors are the widow and five children, John, Willis, Waldemar and Nathan Bergstrom, all of Neenah, and Mrs. Mary MacQuarrie, of Minneapolis.

German Paper Shipments Lower

Exports of German printing, writing and wrapping papers, the bulk of the German paper shipments, during the first five months of the current year were without exception under those of the corresponding period in 1927, according to the Paper Division, Department of Commerce.

Exports of printing papers amounted to 80,887 metric tons as against 81,049 tons in 1927, while exports of writing papers during this period show a decline from 8,365 tons to 7,408 tons and wrapping papers from 39,887 tons to 37,759 tons. About 1,600 tons of pergament paper were included in the latter amount as against 1,902 tons in shipments for 1927.

Over one-third of the wrapping paper shipments went to the United Kingdom, while France was the principal recipient of German printing papers, and the Latin American countries of writing papers. Considerable amounts of wrapping paper also went to the Far East and of printing paper to Latin America.

For reliable running and average long life

LINDSAY FOURDRINIER WIRES

are unsurpassed

We make them for the largest and fastest machines.

Cylinder Wires All Sizes

The Lindsay Wire Weaving Co.

Collinwood Sta. CLEVELAND, OHIO

"Good strong *selling* points"

are what your salesmen like! They get plenty of them when they sell Paprus Dishes! For these dishes hold their shape like wood—yet sell for less than other dishes. They are made in one piece from moulded pulp. No folds—no staples—no holes for leakage—absolutely waterproof. Write for price list.

Paprus Dishes used as covered container

PAPRUS DISHES

KEYES FIBRE COMPANY, Inc.
General Sales Offices: GRAYBAR BLDG., NEW YORK
Factory: Waterville, Me. JOHN M. HART COMPANY, Inc., *Manager of Sales*

Prompt deliveries made from stocks in
NEW YORK
BOSTON
PHILADELPHIA
CHICAGO

TRADE MARK

Fishing *and* Good Dyestuffs

The experienced fisherman knows where to make his casts—so gets good results. Experienced buyers of dyestuffs are equally wise — they come to Heller & Merz.

Heller & Merz has cooperated with dyestuff users for over a half a century. That is a significant record.

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Power plants—additions—complete paper mill projects

ONE great organization—a specialist in paper mill engineering and construction—designs, builds, rebuilds, reports, appraises, for many of the most important concerns in the paper industry. Plans, price, construction work, delivery date, owner's satisfaction, all guaranteed.

Ferguson customers include:

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A. P. W. Paper Co.
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Spencer-Wynne Paper Products Company
Bennington Wax Paper Company
Oswego Falls Corp.
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Ferguson ENGINEERS

Paper Mill Stocks and Bonds

Quoted by Taylor & White, 45 Wall street, New York City, to whom all inquiry for quotations on these or any other Securities is referred.

Abitibi Power & Paper 5s, 1943	94	95
Abitibi Power & Paper 6s, serially to 1934	100	102
American Writing Paper 6s, 1947	86	89
Bastrop Pulp & Paper 6½s, 1940	103½	105½
Bedford Pulp & Paper 6½s, 1942	97	100
Belgo-Canadian Paper 6s, 1943	100	103
British-Columbia Pulp & Paper 6s, 1950	89	92
Brompton Paper Serial A 6s, 1946	101	103
Brompton Pulp & Paper 6s, 1935	100	...
Brown Paper Mills Serial 6s, 1941	97	100
Brown Company 5½s, 1946	98	101
Bryant Paper 6s, 1942	98	101½
Canadian Paper Board 7s, 1937	97	99½
Cape Breton Pulp & Paper 6s, 1932	103	...
Celotex Company 6s, 1937	95	99
Celotex Company 6½s, 1939	100	102
Celotex Company of Chicago Debenture 6s, 1936	97	100
Central Paper Company Serial 6½s, 1942	86	89
Central Paper 7s, 1934	78	...
Champion Coated Paper Serial 6½s, 1934	100	...
Champion Coated Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 6s, 1941	100	102
Champion Fibre Notes 8s, 1930	100	...
Champion Paper Corp 6s, 1945	95	98
Container Corp of America Debenture 6s, 1936, ex-warrants	101	104
Continental Paper Products 6½s, 1943	95	99
Cornell Wood Products 7½s, 1937	103	...
Crown Willamette 6s, 1951	101	102
Dells Paper & Pulp Serial 6s, 1938	95	98
Dixon Board Mills Serial 6s, 1942	65	...
Donnaconna Paper 5½s, 1948	95	98
Eastern Manufacturing Co. 7s, 1938	97	100
Escanaba Paper Serial 6s, 1939	98	100
Escanaba Paper 6½s, 1935	96	99
Filer Fibre Serial 7s, 1935	90	95
Fort Orange Paper 7s, 1942	101	...
Fort William Paper 6s, 1946	100	104
Fraser Company 6s, 1950	103	105
Hammermill Paper Serial 6s, 1939	101	...
Hawley Pulp & Lumber 6s, 1946	96	...
Hawthorne Paper Company 6s, 1937	80	...
Hoberg Paper & Fibre 7s, 1937	94	97
Industrial Fibre Corp. Debenture 8s, 1933	100	...
International Paper 6s, 1955	102	103
International Paper 5s, 1947	98	100
Itasca Paper & Prairie River Paper Serial 5½s, 1938	99½	...
Itasca Paper & Prairie River Paper Serial 6s, 1938	99	...
Jessup & Moore First 6s, 1945	85	90
Kalamazoo Vegetable Parchment 6s, 1938	99	101
Lake Superior Pulp & Paper 6s, 1941	105	108
Manitoba Paper 6½s, 1936	102	104
Marathon Paper Mills Serial 5½s, 1942	99	101
Marinette & Menominee 7½s, 1936	103	105
Mead Pulp & Paper 5% Notes Serially, 1937	95	100
Mead Fibre 7s, 1937	98	101
Menosha Printing & Carton 6½s, 1939	99½	...
Minnesota Ontario Paper Serial 6s, 1945	97½	100
Murray Bay Paper Serial 6s, 1947	102	105
Munissing Paper Serial 6s, 1936	98	...
Nekoosa Edwards Paper 6s, 1924	96	...
Ontario Pulp & Paper 6s, 1931	108½	110½
Orono Pulp & Paper 6s, 1943	99	...
Orono Pulp & Paper 5s, 1941	96½	...
Oswegatchie Paper Serial 6s, 1932	95	100
Oswego Falls Corp. 6s, 1941	99	102
Parker-Young Company 6½s, 1944	98	100
Paterson Parchment Papers 6s, 1938	101	103
Penobscot Chemical Fibre 6s, 1924	102	105
Port Alfred Pulp & Paper 5½s, 1947	98	100
Price Brothers 6s, 1943	105	...
Provincial Paper 5½s, 1947	98½	...
Provincial Paper 6s, 1940	100	...
Queen City Paper 7s, 1933	98	...
River Raisin Paper 6s, 1936	98	100
Riordan Pulp & Paper 6s, 1942	102	104
Rolland Paper 6s, 1937	99	101
St Anne Paper 6½s, 1946	102	104
St. Croix Paper Serial 5s, 1937	99	...
St. Helen Pulp & Paper 6½s, 1931	99	102
St. Maurice Valley Corp. 6s, 1945	102	104
St. Maurice Valley Corp 5½s, 1947	98½	100½
St. Regis Paper of Canada 6s, 1931	100	101½
St. Regis Paper of Canada 6½s, 1934	100	100
Smith (Howard) Paper Mills 6s, 1934	101	...
Smith (Howard) Paper Mills 7s, 1941	104	106
Spanish River Pulp & Japer 6s, 1931	108	110
Stevens-Thompson Paper 6s, 1942	94	96
Taggart Brothers 6s, 1944	95	100
Tait Paper & Color Industries 6s, 1935	88	92
Ticonderoga Pulp & Paper 5s, 1930	94	...
Ticonderoga Pulp & Paper 6s, 1940	100	102
Tomahawk Kraft Paper 6s, 1938	98	...
Tomahawk Pulp Paper 7s, 1932	99	...
Tonawanda Paper 5½s, Series 1941	99	102
Union Bag & Paper Power 6s, 1932	98	100
United Wall Paper Factories 6s, 1947	96	99
Warren (S. D.) Company 6s, 1945	103	105
Watab Paper 6½s, 1942	101½	103½
Waterway Paper Products 6s, 1931	100½	101½
Wayagamack Pulp & Paper 6s, 1951	103	105
Westfield River Paper Serial 7s, 1943	89	93
Whitmer-Parson Pulp & Lumber 8s, 1938	20	25
Whitaker Paper 7s, 1942	108	110

STOCKS	BID	ASKED
American Box Board, Pfd.	9¼	10¼
American Box Board, Com.	9¼	10¼
Am. Tissue Mills, 7% Pfd.	90	93
British Columbia P. & P Pfd.	65	75
Brompton Pulp & Paper, 8% Pfd.	100	...
Champion Fibre, 7% Pfd.	108	110
Diem & Wing, 7% Com. Pfd.	92	97
Eastern Mfg. Co., 1st Pfd.	65	...
Great Northern Paper, Com.	75	78
Hammermill Paper, new 6% Pfd.	98	100
Hinde & Dauch, Com.	125	None Off.
Hinde & Dauch, 6% Pfd.	102	None Off.
Holyoke Card & Paper	150	None Off.
Marathon Paper Mills, Com.	125	...
Midwest Box Co., 8% Pfd.	98	102
Midwest Box Co., 6% Pfd.	95	99
Louis De Jonge Co., 7% Pfd.	94	97
Oxford Papers, Com		
Oxford Paper Co., Pfd.	108	111
Penobscot Chemical Fibre, Com.		
Richardson Co., Com.	170	
Rubberoid	98	101
Sabin Robbins Paper Co., 7% Pfd.	105	110
St. Croix Paper	155	...
St. Regis Paper Co., 7% Cum. Pfd.	105	108
Westfield River Paper Co., 1st Pfd.	Wanted	None Off.
West Virginia Pulp and Paper Company	53	
West Virginia Pulp and Paper, Pfd.	100	103
Whittaker Paper, 7% Cum. Pfd.	105	None Off.

Hearst's Canadian Suit Settled

MONTREAL, Que., August 7, 1928.—It was announced here tonight that as a result of negotiations held in Montreal today a settlement of the outstanding differences between the Hearst group of newspapers and the news print manufacturers associated with Canadian Sales, Ltd., has been reached. The various suits and countersuits pending before the courts in the United States and Canada have been withdrawn.

The suits originated with the instituting of action in New York on June 16 by William Randolph Hearst and the Newspaper and Magazine Paper Corporation, a Hearst subsidiary, for $24,740,000 damages against the Canadian Paper Sales, Ltd., and a number of Canadian news print manufacturers for alleged breach of contract.

The papers set forth that the Newspaper and Magazine Corporation had made an oral agreement about April 2 with the Canadian sales company to supply a score of Hearst newspapers with 3,000,000 tons of news print, to be delivered 300,000 tons annually for ten years.

According to the papers, the Canadian manufacturers who were to supply the paper were the Abitibi Power and Paper Company, Anglo-Canadian Pulp and Paper Mills, Brompton Pulp & Paper Company, Fort Frances Pulp and Paper Company jointly with the Kenora Paper Mills, Laurentide Company, Port Arthur Pulp and Paper Corporation, Price Bros. & Co. and the St. Maurice Valley Corporation.

The alleged sales agreement also contained what was termed a "Hearst Guarantee" whereby the guarantor agreed to guarantee the fulfilment of all obligations made by the New York company. It also provided for rebates to Mr. Hearst as guarantor and to the Newspaper and Magazine Paper Corporation.

The papers set forth that on April 21 the Canadian Paper Sales, Ltd., "failed and refused and gave notice it would continue to refuse further to perform the sales contract." The corporation sued for $10,840,000 damages for this alleged breach of contract and Mr. Hearst sued the same companies for $13,900,000.

On July 18 in Montreal the Canadian Paper Sales, Ltd., began action for $978,630.35 against the Newspaper and Magazine Paper Corporation and Mr. Hearst, asserting that paper to that value had been shipped to the Hearst papers. At the same time forty-five carloads of paper destined for these papers were held up under court order.

That's Going Some

Huff, Barnes & Opie, Inc., Pittsburgh, report their 1928 "Malmo Drive," June 21 to July 21 (thirty days), resulted in the sale of seventy-two carloads—all for immediate shipment.

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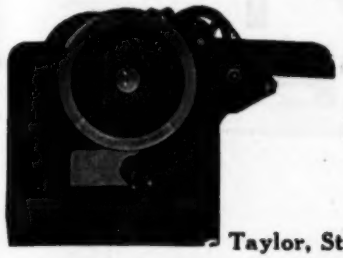

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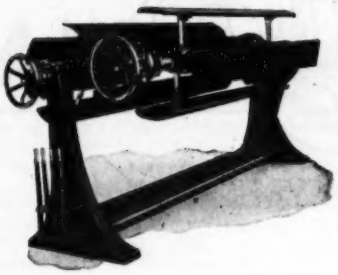

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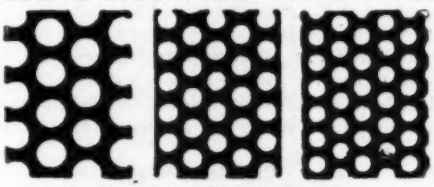

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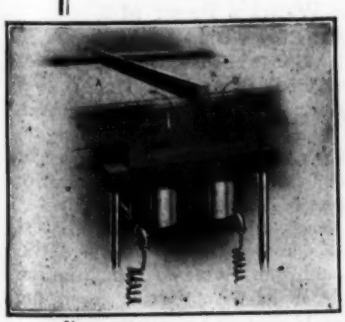

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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, August 8, 1928.

Conditions in the local paper market are satisfactory for the time of the year, although trading during the past week was light and mostly along routine lines. Identical mill reports to the American Paper and Pulp Association placed the total production of paper for the first half of 1928 at 3,507,196 tons, as compared with 3,403,724 tons for the first half of 1927. Shipments for the first half of 1928 were 3,451,461 tons, as compared with 3,367,979 tons in 1927. Prices of the various grades are generally holding to schedule and there is little talk of concessions.

News print consumption is well up to average for the season. Production in the United States and Canada is being maintained at about 78 per cent capacity. Offerings are large enough to take care of immediate requirements. The price situation is rather weak, however, and generous concessions are being made in some quarters on contracts signed for the forthcoming year.

The undertone of the paper board market is sound and the greater output being maintained this year is being freely absorbed. Prices remain steady and unchanged. The fine paper market is fairly active and orders for tissues are being booked in good volume. No radical changes have transpired in the coarse paper market. Summer specialties are in excellent request and wrapping paper is moving in a normal manner for the season.

Mechanical Pulp

Most of the business transacted in the ground wood market during the past week was for immediate requirements. Consumers are reported to be well covered, in most instances. While production both at home and abroad has been curtailed somewhat, quotations generally remain steady and unaltered from recently quoted levels.

Chemical Pulp

While the local chemical pulp market has been affected somewhat by the hot weather and the holiday period, inquiries for future business are fairly numerous and more active conditions are anticipated in the near future. Offerings of the higher grades are limited and prices are generally firm. Bleached soda pulp is slightly weaker and is now selling at from $3.15 to $3.50, according to grade.

Old Rope and Bagging

Both domestic and foreign old rope is in persistent request from the paper mills. Manila rope remains steady at from $3.25 to $4.00, and shading is infrequent. The bagging market is in a fairly sound position. Scrap bagging is moving in a normal manner and gunny is exhibiting a sound undertone. Prices remain unchanged, in most instances.

Rags

The domestic rag market is practically unchanged. Roofing stock continues in excellent request. Cotton cuttings are moving in fair volume. Offerings of mixed rags are somewhat scarce at present. The imported rag market remains quiet. The situation in Europe is considered unfavorable and dealers continue to ask high prices, due to the heavy home demand.

Waste Paper

Paper mill interest in the different grades of paper stock is showing signs of improvement. Offerings of some grades are scarce and prices rule firmer, in some instances. Container manilas have advanced to from .62½ to .70; old kraft machine compressed bales to from 1.80 to 1.90; No. 1 white news to from 1.50 to 1.60, and strictly folded news to from 57½ to 62½. On the other hand, quotations on hard white No. 2 shavings have declined to from 2.50 to 2.65, and ledger stock to from 1.60 to 1.75.

Twine

Although the twine market is in a favorable position, business is marking time at present, due to the usual mid-summer lull. However, a general expansion of trading is confidently expected, in most quarters, to take place during the closing months of the year. Prices are generally holding to the levels which have prevailed for some considerable time past.

Taggart Corp. Issues Interesting Booklet

OSWEGO, N. Y., August 6, 1928.—The Taggart Corporation has issued an interesting booklet telling of the activities of the company, which is being distributed among stockholders. The booklet contains views of the various plants of the company including the Taggart mills in Watertown and Herrings, Champion Paper Company, of Carthage, Taggart-Oswego Paper and Board Corporation and the Carthage Power Corporation.

Included is a history of the Taggart business which was founded in 1866 by the ancestors of a number of the men still associated with the company. According to the information contained therein the Taggart Company is the largest producer of paper bags in the world. These bags, including the Taggart multi-wall bag, are used for rock products, flour and practically all heavy pulverized materials.

The mills of the operating subsidiaries of the Taggart Corporation, all located within a 75 mile circle in Northern New York, have an annual capacity, the book states, of more than 50,000 tons of kraft and rope paper and 200,000,000 bags.

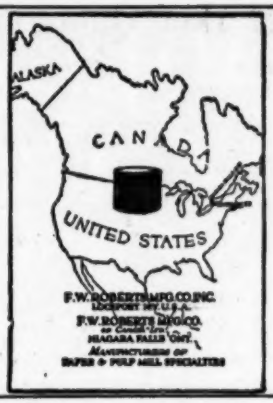
The book is profusely illustrated, many of the pictures being in colors. A full page picture of the new Taggart Oswego mill and another large illustration showing the equipment of the local plant are among the interesting pictures. The Herrings mill, the Watertown plant, and the Champion Paper Company, of Carthage are also pictured as well as a collection of more than fifty bags produced by the firm.

Pueblo, Colorado, Wants a Paper Mill

PUEBLO, Colo., August 3, 1928.—The board of directors of the Commerce Club of Pueblo, Colo., instructed its secretary, P. A. Gray, to notify some paper executives of Appleton, Wis., (names withheld) that the club was informed that paper mill men of Wisconsin had, after many tests, found the Engleman spruce tree an excellent wood for paper making, that Pueblo with its splendid transportation, power and water facilities and sites for factories would welcome the establishment of a paper mill in that city.

Pueblo is a junction point, that is it is the end of the Missouri Pacific railroad which makes connection with the Denver & Rio Grande Western for Denver and points West and South on the Rio Grande. The Rio Grande on its western route covers the Engleman spruce country like a blanket, and of course the Santa Fe railroad covers Pueblo on its way to and from Denver.

BURRS



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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, August 8, 1928.

BLANC FIXE.—Trading in the blanc fixe market was fairly satisfactory during the past week. Contract shipments were well up to average. Prices are unchanged. The pulp is selling at $40 per ton, in bulk, while the powder is quoted at from 3½ cents to 3⅝ cents a pound, in barrels, at works.

BLEACHING POWDER.—Conditions in the bleaching powder market are practically unchanged. Demand is moderately active and prices are holding to schedule. There is not much talk of concessions around. Bleaching powder is still offered at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—Offerings of casein were more generous than of late and prices were slightly weaker. Domestic casein is now quoted at from 16¼ cents to 16¾ cents a pound, while imported casein is quoted at from 16½ cents to 16¾ cents a pound, all in bags, car lot quantities.

CAUSTIC SODA.—Contract shipments of caustic soda are moving in excellent volume. Prices are generally holding to schedule. Solid caustic soda is selling at from $2.90 to $2.95 per 100 pounds. The flake and the ground are quoted at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Steadiness prevails in the china clay market. Supplies are moving at a normal rate. Prices remain unchanged. Imported china clay is quoted at from $15 to $25 a ton, ship side. Domestic paper making clay is offered at from $8 to $9 a ton, at mine, and pulverized at from $10 to $12 a ton.

CHLORINE.—Consumption of chlorine is being maintained in satisfactory volume and prices are holding to previously quoted levels. Chlorine is selling at 3½ cents a pound, in tanks, or multi-unit cars, at works, on contract orders. The spot quotation ranges from 3¾ cents to 4 cents a pound.

ROSIN.—The rosin market continues to fluctuate. At the naval stores, the grades of gum rosin used in the paper mills are now selling at from $9.00 to $9.65 per 280 pounds, ex dock, in barrels. Wood rosin is still offered at from $7.50 to $8.30 per 280 pounds, at southern shipping points.

SALT CAKE.—While production has been slightly curtailed, the salt cake market continues to exhibit a strong undertone. Contract shipments are moving in fair volume. Salt cake is quoted at from $15 to $17 a ton, in bulk, at works. Chrome salt cake is selling at from $14 to $15 a ton.

SODA ASH.—Demand for soda ash is fairly active. Contract withdrawals are moving at an excellent pace. Prices are holding to schedule without difficulty. Contract quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—The starch market is exhibiting a strong undertone. Contract shipments are moving in satisfactory volume. Recently advanced prices are being maintained. Special paper making starch is still quoted at $4.22 per 100 pounds, in bags, and at $4.39 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Supplies of sulphate of alumina continue to move into consumption in good volume. Demand is seasonal and prices rule steady to firm. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.55 per 100 pounds, and iron free at from $1.90 to $2.05.

SULPHUR.—The sulphur market is in a sound position. Although demand has fallen off slightly, prices remain unchanged and the future outlook is bright. Sulphur is still quoted at from $18 to $19 a ton, at mine, in bulk, on contract orders. The spot quotation is $20 per ton.

TALC.—Manufacturers of talc are enjoying a normal demand for their product. The former schedule of prices is being maintained and shading is infrequent. Domestic talc is selling at from $16 to $18 a ton, in bulk, at eastern mines. Imported talc is quoted at from $18 to $20 a ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub sized	10.00	@15.00
Engine sized	8.00	@11.00
News—		
Rolls, contract	3.25	@ —
Rolls, transient	3.25	@ 3.50
Sheets	3.65	@ 3.85
Side Runs	3.00	@ 3.75
Book, Cased—		
S. & S. C.	6.35	@ 7.75
M. F.	6.25	@ 7.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream—		
White No. 1	.75	@ 1.00
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.75	@ .85
Kraft	.90	@ 1.00
Manila	.75	@ .85
Kraft—		
No. 1 Domestic	6.25	@ 6.50
No. 2 Domestic	4.25	@ 4.50
Southern	4.00	@ 4.25
Imported	6.50	@ 7.00
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	5.00	@ 5.50
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.75	@ 3.00
Screenings	3.00	@ 3.25
Card Middles	4.00	@ 5.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

(Delivered New York)

Boards—per ton—		
News	47.50	@50.00
Straw	52.50	@55.00
Chip	45.00	@47.50
Binders' Boards	65.00	@67.50
Sgl. Mla. Ll. Chip	51.00	@53.50
Wood Pulp	80.00	@85.00
Container	67.50	@72.50
85 test Jute Liner	57.50	@60.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported—		
Moist	30.00	@31.25
Dry	32.00	@34.00

(F. o. b. Mill)

No. 1 Domestic	26.00	@29.00
Screenings	15.00	@20.00

Chemical Pulp

(Ex-Dock; Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.65	@ 4.25
Easy Bleaching	2.70	@ 2.90
No. 1 strong unbleached	2.60	@ 2.70
Mitscherlich unbleached	2.65	@ 3.25
No. 2 strong unbleached	2.50	@ 2.60
No. 1 Kraft	2.60	@ 2.75
No. 2 Kraft	2.40	@ 2.50
Sulphate—		
Bleached	3.75	@ 3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.40	@ 4.75
Easy Bleaching Sulphite	2.60	@ 2.75
News Sulphite	2.40	@ 2.65
Mitscherlich	3.00	@ 3.70
Kraft (Domestic)	2.70	@ 3.30
Soda Bleached	3.15	@ 3.50
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.50	@ 1.65

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—		
New White, No. 1	11.75	@12.25
New White, No. 2	8.00	@ 8.50
Silesias No. 1	7 25	@ 7.75
New Unbleached	10.50	@11.00
Washables	4.25	@ 4.75
Fancy	5.50	@ 6.00
Blue Overall	6.75	@ 7.25
New Blue Prints	5.25	@ 5.50
New Soft Blacks	5.25	@ 5.75
Mixed Khaki Cuttings	4.75	@ 5.25
Pink Corset Cuttings	8.00	@ 8.50
O. D. Khaki Cuttings	5.25	@ 5.75
Men's Corduroy	3.75	@ 4.25
New Mixed Blacks	3.50	@ 3.75

Old Rags

White, No. 1—		
Repacked	5.50	@ 6.00
Miscellaneous	4.50	@ 5.00
White, No. 2—		
Repacked	3.00	@ 3.50
Miscellaneous	2.50	@ 2.75
St. Soil'd, White	2.00	@ 2.15
Thirds and Blues—		
Repacked	2.25	@ 2.50
Miscellaneous	1.75	@ 2.00
Black Stockings	3.25	@ 3.75
Roofing Rags—		
Cloth Strippings	1.70	@ 1.80
No. 1	1.70	@ 1.80
No. 2	1.55	@ 1.65
No. 3	1.30	@ 1.40
No. 4	1.25	@ 1.35
No. 5A	.95	@ 1.05

Foreign Rags

New Dark Cuttings	2.50	@ 3.00
New Mixed Cuttings	2.75	@ 3.25
New Light Silesias	7.00	@ 7.50
Light Flannelettes	7.50	@ 8.00
Unbleached Cottons	10.00	@11.00
New White Cuttings	10.50	@11.50
New Light Oxfords	7.00	@ 7.50
New Light Prints	5.50	@ 6.50
No. 1 White Linens	7.25	@ 8.00
No. 2 White Linens	5.50	@ 6.25
No. 3 White Linens	4.50	@ 5.00
No. 4 White Linens	3.00	@ 3.50
Old Extra Light Prints	2.75	@ 3.25
Ord. Light Prints	2.25	@ 2.50
Med. Light Prints	1.90	@ 2.10
Dutch Blue Cottons	2.25	@ 2.50
German Blue Linens	2.50	@ 2.75
German Blue Cottons	2.00	@ 2.25
Checks and Blues	1.75	@ 1.90
Lindsay Garments	1.85	@ 1.95
Dark Cottons	1.65	@ 1.75
Old Shopperies	1.55	@ 1.65
New Shopperies	1.50	@ 1.60
French Blues	2.10	@ 2.25

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—		
Foreign	1.60	@ 1.70
Domestic	1.70	@ 1.75
Wool Tares, light	1.60	@ 1.65
Wool Tares, heavy	1.60	@ 1.65
Bright Bagging	1.60	@ 1.65
Small Mixed Rope	1.25	@ 1.40
Manila Rope—		
Foreign	3.25	@ 3.50
Domestic	3.25	@ 4.00
New Burlap Cut	2.75	@ 3.00
Hessian Jute Threads—		
Foreign	3.50	@ 4.00
Domestic	3 25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, white, No. 1	3.25	@ 3.50
Hard, white, No. 2	2.50	@ 2.65
Soft, White, No. 1	2.25	@ 2.50
White envelope cuttings	3.25	@ 3.50
Flat Stock—		
Stitchless	1.65	@ 1.75
Overissue Mag.	1.65	@ 1.75
Solid Flat Book	1.50	@ 1.60
Crumpled No. 1	1.20	@ 1.30
Solid Book Ledger	2.00	@ 2.10
Ledger Stock	1.60	@ 1.75
Manilas—		
New B. B. Chips	.65	@ .75
New Env. Cut	2.40	@ 2.60
New Cuttings	1.60	@ 1.85
Extra No. 1 old	1.25	@ 1.35
Print	.75	@ .85
Container	.62½	@ .70
Bogus Wrapper	.75	@ .85
Old Kraft Machine Compressed bales	1.80	@ 1.90
News—		
No. 1 White News	1.50	@ 1.60
Strictly Overissue	.80	@ .90
Strictly folded	.57½	@ .62½
No. 1 Mixed Paper	.47½	@ .50
Common Paper	.30	@ .35

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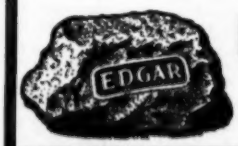

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Twines

(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.20	@	.22
Tube Rope—			
4-ply and larger	.18	@	.19
Fine Tube Yarn—			
5-ply and larger	.23	@	.27
4-ply	.24	@	.28
3-ply	.26	@	.30
Unfinished India—			
Basis	.16	@	.17
Paper Makers Twine			
Balls	.13	@	.15
Box Twine, 2-3 ply	.17	@	.19
Jute Rope	.21	@	.23
Ameri. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.18	@	.20
No. 2 Basis	.16	@	.18
Sisal Lath Yarn—			
No. 1	.16	@	.18
No. 2	.14	@	.16
Manila Rope	.24	@	.26

CHICAGO

All Rag Bond	.35	@	.41
No. 1 Rag Bond	.25	@	.35
No. 2 Rag Bond	.14	@	.25
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¾
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
News—Roll, mill	.03½	@	.04¼
News—Sheets, mill	.03¾	@	.04¾
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	.03¾	@	.04
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¾
White Tissue—			
20x30 Sheet	.07¼	@	.07½
Boards, per ton—			
(Delivered Central Territory)			
Plain Chip	37.50	@	41.00
Solid News	47.50	@	—
Manila Lined Chip	55.00	@	—
Container Lined—			
(Delivered Central Territory)			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.80	@	2.90
White Env. Cuttings	2.90	@	3.00
No. 1 Soft Shavings	2.50	@	2.60
No. 1 Mixed	1.00	@	1.05
No. 2 Mixed	.90	@	1.00
Ledger & Writings	1.55	@	1.65
Solid Books	1.25	@	1.35
Blanks	1.70	@	1.80
Krafts	1.90	@	2.00
New Kraft Cuts	2.25	@	2.35
Manila Envelope Cuttings	2.00	@	2.10
Ex. No. 1 Manila	1.55	@	1.65
Print Manila	.90	@	1.00
Folded News (overissue)	.65	@	.75
Old Newspapers—			
No. 1	.65	@	.75
No. 2	.60	@	.65
Mixed Papers—			
No. 1	.70	@	.80
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

(F. o. b. Mill)

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Label	.09	@	.12
News	.03¼	@	.04
No. 1 Jute Manila	.08½	@	.09
Manila Sul., No. 1	.04½	@	.06
Manila, No. 2	.04	@	.04½
No. 2 Kraft	.05¼	@	.05½
No. 1 Kraft	.06	@	.06¼
Common Bogus	.02¾	@	—
Straw Board	50.00	@	75.00
News Board	47.50	@	—
Chip Board	42.50	@	45.00
Wood Pulp Board	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
No. 1, per ton	80.00	@	90.00
No. 2, per ton	75.00	@	80.00
Carload lots	65.00	@	75.00
Tarred Felts—			
Regular	58.00	@	63.00
Slaters (per roll)	84	@	.94
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.44	@	1.54
Best Tarred, 3-ply	1.93	@	2.08
No. 1 Mixed Paper	.65	@	.70

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.11½	@	.12
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07½	@	.08
Black Silesia, soft	.05	@	.05½
New Unbleached	.10½	@	.11
Washable	.03½	@	.04
Fancy	.05½	@	.06
Cottons—according to grades—			
Blue Overall	.07½	@	.08
New Blue	—	@	.04
New Black Soft	.05½	@	.06
New Light Seconds	.03	@	.03½
Khaki Cuttings	.04½	@	.05
Corduroy	.03	@	.03½
New Canvas	.08	@	.09½
New Black Mixed	.05	@	.05½

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.75	@	2.00
Domestic	1.75	@	2.00
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps	1.40	@	1.50
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	—	@	2.50

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	3.20	@	3.25
No. 2 Hard White	2.75	@	3.00
No. 1 Soft White	2.40	@	2.50
No. 2 Soft White	1.90	@	2.00
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	.90	@	1.00
Solid Ledger Stock	1.50	@	1.60
Writing Paper	1.50	@	1.60
No. 1 Books, heavy	1.50	@	1.60
No. 2 Books, light	1.25	@	1.40
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.95	@	1.00
Container Manila	.80	@	.90
Old Kraft	2.25	@	2.50
Common Paper	.50	@	.55
No. 1 Mixed Paper	.55	@	.60
Straw Board, Chip	.60	@	.65
Binders Board, Chip	.60	@	.65
Overissue News	.75	@	.80
Old Newspaper	.50	@	.60

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	4.00
White, No. 2—			
Repacked	.02¼	@	.02¾
Miscellaneous	.01¼	@	.02
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.80	@	2.00
Black Stockings	3.75	@	4.00
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.40	@	1.50
No. 3	1.25	@	—
No. 4	1.25	@	—
No. 5A	.85	@	.90
B	.80	@	.90
C	.70	@	.80

BOSTON

Paper

(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.15
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.13	@	.30
All rag	.36½	@	.65
Writings	.07	@	.20
Superfines	.11	@	.31
News	.03½	@	.04
Book, Super	.06	@	.09
Book, M. F.	.05¼	@	.08½
Book, Coated	.08½	@	.20
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¼	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.05¼	@	.06½
No. 2 Kraft	.04	@	.04¾
Common Bogus	.02	@	.02¾
Delivered New England points			
Straw Boards, rolls .009			52.50
Straw Board in Sheets, basis 35s to 70s			54.50 @ 55.00
Filled News Board			47.50
Chip Board			45.00
Single Manila Pulp Lined Board			52.50 @ 57.50
Single White, Patent Coated Newsboard Bender			70.00 @ 80.00
Wood Pulp Board			80.00 @ 85.00
Binder Boards			70.00 @ 75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots			65.00 @ —

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.45	@	2.55
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	2.35	@	2.45
No. 1 Books, Heavy	1.55	@	1.60
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	1.20	@	1.25
White Blank News	1.40	@	1.50
Old Kraft	1.90	@	2.00
Print Manila	.70	@	.80
No. 1 Mixed Paper	.47½	@	.52½
Overissue News	.70	@	.80
Old Newspapers	47.50	@	52.50
Box Board, Chip	.65	@	—

Bagging

(Price f. o. b. Boston)

Gunny No. 1—			
Foreign	—	@	1.60
Manila Rope—			
Foreign	3.00	@	3.25
Domestic	3.25	@	3.50
Mixed Strings	.85	@	1.00
Scrap Burlaps	1.50	@	1.60
Scrap Sisal	1.25	@	—
Scrap Sisal for shredding	1.50	@	—
Wool Tares, heavy	—	@	1.50
New Burlap Cutting	—	@	2.00

Domestic Rags (New)

(Price f. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.09	@	.10
Silesias, No. 1	.07	@	—
New Unbleached	.09½	@	.10
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06	@	.06½
New Black, soft	.04	@	.04½
Khaki Cuttings	.04	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08	@	.08½

Domestic Rags (Old)

(Price f. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Thirds and Blues—			
Repacked	2.00	@	2.15
Miscellaneous	1.75	@	1.90
Roofing Stock—			
No. 1	1.75	@	1.85
No. 2	1.45	@	1.55
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.65	@	1.70
New No. 1 Shirt Cuttings	9.00	@	10.00
Dutch Blues	2.00	@	2.12½
Lace Curtains	5.00	@	5.50
New Checks & Blues	4.50	@	4.65
Old Fustians	1.90	@	—

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¼	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
News f. o. b. Mills—			
Rolls (carloads)	3.25	@	—
Sheets (carloads)	3.75	@	—
Sheets (2 tons or over)	4.00	@	—
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	14.50	@	—
No. 2 Coated and Litho	13.50	@	—
No. 3 Coated and Litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.00	@	—

Pulp

(F. o. b. Mill)

Ground Wood	30.00	@	31.00
Sulphite easy bleaching	62.00	@	—
Sulphite news grade	62.00	@	—
Sulphite, bleached	75.00	@	—
Sulphate	65.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.50	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Strictly Folded	.80	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.11½	@	—
Fancy Shirt Cuttings	.05½	@	—

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FIFTY-SEVENTH YEAR

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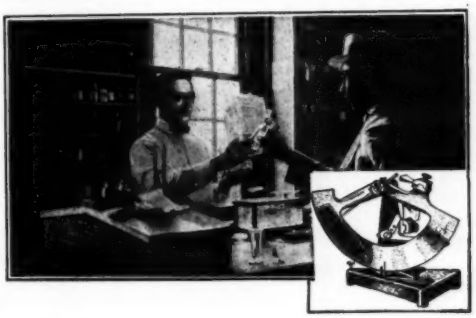
ELMENDORF

"THE UNIVERSAL PAPER LANGUAGE"



BECAUSE it is written in Latin, the universal medical language, a man with a prescription can go into a drug store anywhere and have it accurately filled.

The Elmendorf Paper Tearing Tester provides a "universal language" in the paper industry. With it, it is possible to fill any "paper prescription" and to furnish exactly what is wanted.

The user of paper can definitely state his requirements and the maker of paper can accurately meet them. In this way, perfect understanding between the maker of paper and the user of paper is assured.

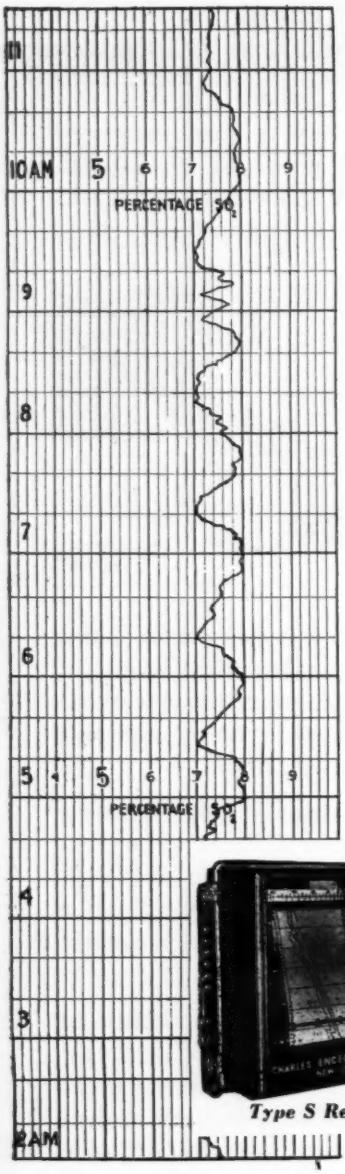
Bulletin Seventeen tells all about the Elmendorf. Send for it

THWING INSTRUMENT COMPANY
3341 Lancaster Ave. Philadelphia, U. S. A.

Makers of

Thwing PYROMETERS

170



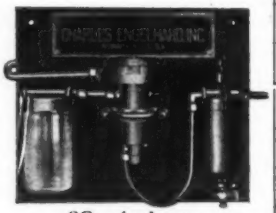
Make a Time Table of Your Sulphur Burns!

Know what your SO_2 should be at any period and keep your burners up to schedule.

The burners, of course, are "pretty badly off" when you first start them. You expect this. But how long does it take them to "come up"?

And after they are going, trouble with the air, the fuel, the burner, or the sulphur will cause rapid falling off of gas made. How long does this happen *before you know it?*

Engelhard SO_2 Recording Analyzer



SO_2 Analyzer

can save money for you by helping you to save fuel, sulphur, time, labor, and needless wear of your equipment. The Analyzer is a remarkably reliable and simple instrument that is making possible important economies in paper mills. It connects with Engelhard Type S Recorder, which has established a record in industry for its ruggedness, simplicity, and *enduring accuracy.*

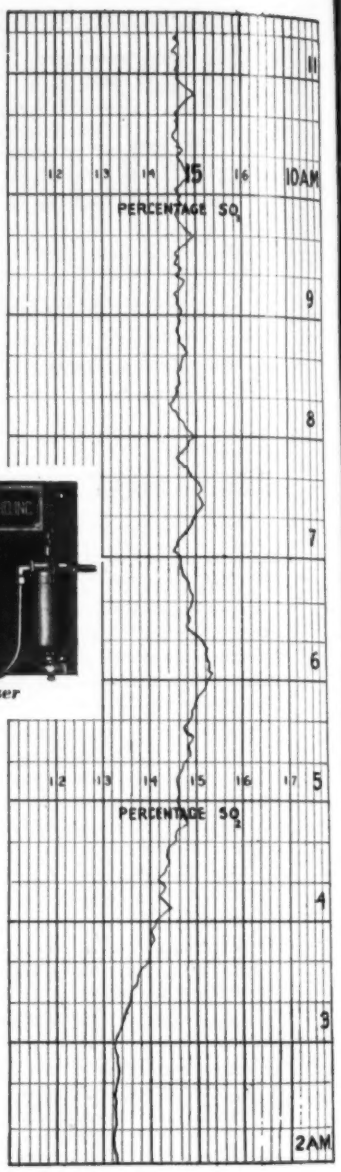
Type S Recorder

The Analyzer

is able to maintain its accuracy for years because the active heating element is protected from the action of catalytic gases and from vibration. It works electrically on the thermal conductivity principle.

The Recorder

also works electrically and is dead beat. It makes a strip chart with 1 to 6 records in black or colors. Temperatures can be shown along with SO_2.



The Recorder may be located at a point remote from point of sampling.

Let an Engelhard Engineer show you how these instruments have saved money for other paper mills.

Simple ***Reliable*** ***Rugged***

Standard for 30 years.

Charles Engelhard, Inc.

Branches: Boston, New York, Pittsburgh, Cleveland, Cincinnati, St. Louis, Los Angeles, and General Supply Co. of Canada, Ltd., Montreal, Ottawa, Toronto.

90 Chestnut St.
Newark, New Jersey
"Knowledge is Power"

Data on the operation of these instruments and their proven worth in paper mills will be sent you on receipt of this coupon clipped to your letterhead.